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ALISMATACEAE

Sagittaria natans Pall., 2*n* = 22; Russia, Magadanskaya Oblast', *OM M15034.*

DROSERACEAE

Drosera anglica Huds., 2*n* = 40; Russia, Magadanskaya Oblast', *OM M15011*; Russia, Magadanskaya Oblast', *EA A16085.*

Drosera rotundifolia L., 2*n* = 20; Russia, Magadanskaya Oblast', *OM M15012*; Russia, Magadanskaya Oblast', *EA A16086.*

HALORAGACEAE

Myriophyllum verticillatum L., 2*n* = 28; Russia, Magadanskaya Oblast', *OM M16102.*

PLANTAGINACEAE

Callitriche palustris L., 2*n* = 20; Russia, Magadanskaya Oblast', *EA A16084*; Russia, Magadanskaya Oblast', *OM M16110.*

Hippuris tetraphylla L.f., 2*n* = 32; Russia, Magadanskaya Oblast', *EA & OM A16005.*

POACEAE

Alopecurus aequalis Sobol., 2*n* = 14; Russia, Magadanskaya Oblast', *EA & OM A16001.*

Arctophila fulva (Trin.) Andersson, 2*n* = 42; Russia, Magadanskaya Oblast', *EA & OM A15006.*

Deschampsia borealis (Trautv.) Roshev., 2*n* = 26; Russia, Magadanskaya Oblast', *EA & OM A16002.*

POTAMOGETONACEAE

Potamogeton perfoliatus L., 2*n* = 52; Russia, Magadanskaya Oblast', *EA A16042.*

RANUNCULACEAE

Caltha palustris L., 2*n* = 32; Russia, Magadanskaya Oblast', *EA & OM A16004*; Russia, Magadanskaya Oblast', *OM M16001.*

Ranunculus gmelinii DC., 2*n* = 16; Russia, Magadanskaya Oblast', *EA & OM A16003*; 2*n* = 24; Russia, Magadanskaya Oblast', *OM M16002.*

Ranunculus hyperboreus Rottb., 2*n* = 32; Russia, Magadanskaya Oblast', *EA & OM A15002*; Russia, Chukotskii Avtonomnyi Okrug, *EA A15084.*

Ranunculus sarmentosus Adams, 2*n* = 16; Russia, Magadanskaya Oblast', *OM M16020*; Russia, Magadanskaya Oblast', *O. Vokhmina M16091.*

Ranunculus trichophyllus Chaix, 2*n* = 32; Russia, Republic of Sakha (Yakutia), *OM & A. Bobrov s.n.* (IBIW).

TYPHACEAE

Sparganium natans L., 2*n* = 30; Russia, Magadanskaya Oblast', *EA & OM A15003.*

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ALLIACEAE

Allium globosum M.Bieb. ex DC., 2*n* = 16; Kazakhstan, Karagandinskaya Oblast', *EK 19/261.*

Allium pallasii Murray, 2*n* = 16; Kazakhstan, Vostochno-Kazakhstanskaya Oblast', *TA 258.*

AMARANTHACEAE

Atriplex fera (L.) Bunge, 2*n* = 18; Russia, Altay Republic, *EK 64.*

Chenopodium album L., 2*n* = 54; Kazakhstan, Almatinskaya Oblast', *EK 61*, *EK 66*, *EK 71*, *EK 52a*, *EK 67*

Chenopodium novopokrovskyanum (Aellen) Uotila, 2*n* = 36; Russia, Zabaikalsky Krai, *AK 827*; Kazakhstan, Almatinskaya Oblast', *EK 47b*, *EK 52c.*

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 recommended: Baltisberger, M. & Voelger, M. 2006. *Sternbergia sicula*. In: Marhold, K. (ed.), IAPT/IOPB chromosome data 1. *Taxon* 55: 444, E2.

Chenopodium strictum Roth, 2*n* = 36; Kazakhstan, Almatinskaya Oblasť, *EK 46.*
Kraschenninnikowia ceratoides (L.) Gueldenst., 2*n* = 18; Russia, Tyva Republic, *AK & EK 36.*
Oxybasis glauca (L.) S.Fuentes, Uotila & Borsch, 2*n* = 18; Kazakhstan, Karagandinskaya Oblasť, *EK 42.*

APOCYNACEAE

Cynanchum sibiricum Willd., 2*n* = 22; Kazakhstan, Zhambylskaya Oblasť, *EK 74/257.*

ASTERACEAE

Cancrinia discoidea (Ledeb.) Poljakov ex Tzvelev, 2*n* = 14; Kazakhstan, Almatinskaya Oblasť, *TA 253.*
Chondrilla leiosperma Kar. & Kir., 2*n* = 18; Kazakhstan, Almatinskaya Oblasť, *EK 53/283.*
Inula britannica L., 2*n* = 16; Kazakhstan, Karagandinskaya Oblasť, *EK 40/292.*
Lactuca serriola L., 2*n* = 18; Kazakhstan, Zhambylskaya Oblasť, *EK 45/291.*
Solidago virgaurea L., 2*n* = 16; Kazakhstan, Almatinskaya Oblasť, *EK 53/284.*
Tripleurospermum ambiguum (Ledeb.) Franch. & Sav., 2*n* = 16; Kazakhstan, Almatinskaya Oblasť, *EK 58/293.*

FABACEAE

Lotus praetermissus Kuprian., 2*n* = 12; Kazakhstan, Karagandinskaya Oblasť, *EK 18/265.*

RANUNCULACEAE

Anemonastrum schrenkianum (Juz.) Holub (≡ *Anemone schrenkiana* Juz.), 2*n* = 16; Kazakhstan, Almatinskaya Oblasť, *EK 60/267.*
Clematis songorica Bunge, 2*n* = 16; Kazakhstan, Almatinskaya Oblasť, *EK 47/277.*
Halerpestes salsuginosa (Pall. ex Georgi) Greene, 2*n* = 16; Kazakhstan, Almatinskaya Oblasť, *TA 247.*

ROSACEAE

Agrimonia asiatica Juz., 2*n* = 22; Kazakhstan, Almatinskaya Oblasť, *EK 63/270.*

TAMARICACEAE

Reaumuria turkestanica Gorschk., 2*n* = 16; Kazakhstan, Zhambylskaya Oblasť, *EK 74/280.*

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SOLANACEAE

Capsicum eximium Hunz., CHN. 2*n* = 24. Argentina, Salta Province, *E.A. Moscone 255* (CORD).

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AMARYLLIDACEAE

Allium microdictyon Prokh., 2*n* = 16; Russia, Republic of Buryatia, *MP & VP Cl625.*

APIACEAE

Angelica decurrens (Ledeb.) B.Fedtsch., 2*n* = 22; Russia, Republic of Buryatia, *MP & VP Cl629.*
Bupleurum aureum Fisch. ex Hoffm., 2*n* = 16; Russia, Republic of Buryatia, *MP & VP Cl609.*

ASTERACEAE

Cirsium helenioides (L.) Hill, 2*n* = 34; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK Cl602.*
Doronicum altaicum Pall., 2*n* = 60; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK Cl599.*
Saussurea latifolia Ledeb., 2*n* = 26; Russia, Republic of Buryatia, *MP & VP Cl611.*

BRASSICACEAE

Cardamine macrophylla Willd., 2*n* = 64; Russia, Republic of Buryatia, *MP & VP Cl590.*

FABACEAE

Lathyrus gmelinii Fritsch, 2*n* = 14; Russia, Republic of Buryatia, *MP & VP Cl591.*

GENTIANACEAE

Swertia baicalensis Popov ex Pissjauk., 2*n* = 26; Russia, Republic of Buryatia, *MP & VP Cl607, MP & VP Cl623.*

GERANIACEAE

Geranium krylovii Tzvelev, 2*n* = 28; Russia, Republic of Buryatia, *MP & VP C1593.*

LAMIACEAE

Lamium album L., 2*n* = 18; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK C1603.*

Origanum vulgare L., 2*n* = 30; Russia, Republic of Buryatia, *MP & VP C1620.*

LILIACEAE

Lilium pilosiusculum (Freyn) Miscz., 2*n* = 24; Russia, Republic of Buryatia, *MP & VP C1608.*

MELANTHIACEAE

Veratrum lobelianum Bernh., 2*n* = 32; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK C1601.*

POLYGONACEAE

Rumex alpestris Jacq., 2*n* = 14; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK C1600.*

PRIMULACEAE

Primula pallasii Lehm., 2*n* = 22; Russia, Republic of Buryatia, *MP & VP C1595*; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK C1596.*

RANUNCULACEAE

Aconitum rubicundum Fisch. ex Steud., 2*n* = 16; Russia, Republic of Buryatia, *MP & VP C1628.*

Anemone baicalensis Turcz., 2*n* = 28; Russia, Republic of Buryatia, *MP & VP C1594, MP & VP C1631*; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK C1605.*

Aquilegia glandulosa Fisch. ex Link, 2*n* = 14; Russia, Republic of Buryatia, *MP & VP C1617.*

Caltha palustris L., 2*n* = 32; Russia, Republic of Buryatia, *MP & VP C1618.*

Eranthis sibirica DC., 2*n* = 16; Russia, Republic of Buryatia, *MP & VP C1614*; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK C1597.*

ROSACEAE

Fragaria orientalis Losinsk., 2*n* = 14; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK C1604.*

Geum rivale L., 2*n* = 42; Russia, Republic of Buryatia, *MP & VP C1589.*

Sibbaldia procumbens L., 2*n* = 14; Russia, Republic of Buryatia, *MP & VP C1615.*

SAXIFRAGACEAE

Bergenia crassifolia (L.) Fritsch, 2*n* = 34; Russia, Republic of Buryatia, *MP & VP C1610*; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK C1598.*

Chrysosplenium sibiricum (Ser.) A.P.Khokhr., 2*n* = 24; Russia, Irkutskaya Oblast', *MP, VP, EZ & AK C1606.*

VIOLACEAE

Viola biflora L., 2*n* = 12; Russia, Republic of Buryatia, *MP & VP C1627.*

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POACEAE

Alopecurus aequalis Sobol., 2*n* = 14; Russia, Altaiskii Krai, *EP, AG & AR Alt15-380*, *EP, AG, NN & AR Alt14-158*, *EP, AG & NN Alt16-147*, *EP, AG & AR Alt15-422*; Russia, Republic of Altai, *EP, AG, NN & AR Alt11-605*, *EP, AG & AR Alt15-321*, *EP, AG, NN & AR Alt11-160.*

Alopecurus arundinaceus Poir., 2*n* = 28; Russia, Altaiskii Krai, *EP, AG & AR Alt15-96*, *EP & ASH Alt16-56*; Russia, Republic of Altai, *EP, AG & AR Alt15-165.*

Alopecurus pratensis L., 2*n* = 28; Russia, Altaiskii Krai, *EP & ASH Alt16-54*, *EP, AG, NN & AR Alt14-188*; Russia, Republic of Altai, *EP, AG & AR Alt10-306*, *EP, AR & MR Alt476*, *EP, AG, NN & AR Alt11-32*, *EP, AG & NN Alt16-410*, *EP, AG & NN Alt16-337.*

Alopecurus vlassowii Trin., 2*n* = ca. 120; Russia, Republic of Altai, *EP, AG & AR Alt15-344.*

Beckmannia syzigachne (Steud.) Fernald, 2*n* = 14; Russia, Altaiskii Krai, *EP, AG & NN Alt16-138*, *EP, AG & NN Alt16-382*, *EP, AG & NN Alt16-278*; Russia, Republic of Altai, *EP, AG & AR Alt15-251*, *EP, AG & AR Alt15-50.*

Phleum phleoides (L.) H.Karst., 2*n* = 14; Russia, Altaiskii Krai, *EP, AG & NN Alt16-194*, *EP, AG & NN Alt16-187*, *EP, AG, NN & AR Alt14-23*, *EP, AG & NN Alt16-260*, *EP, AG & NN Alt16-111.*

Phleum pratense L., 2*n* = 42; Russia, Altaiskii Krai, *EP, AG & NN Alt16-110*; Russia, Republic of Altai, *EP, AG, NN & AR Alt16-412*, *EP, AG, NN & AR Alt11-817.*

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CYSTOPTERIDACEAE

Cystopteris altajensis Gureeva, *n* = 126; Russia, Republic of Khakassia, *IG, DU, RR & SG s.n.* (TK 003629), *IG, DU, RR & SG s.n.* (TK 003630).

Cystopteris fragilis (L.) Bernh., *n* = 126; Russia, Republic of Khakassia, *IG, DU, RR & SG s.n.* (TK 003627), *IG, DU, RR & SG s.n.* (TK 003625), *IG, DU, RR & SG s.n.* (TK 003628).

Gymnocarpium dryopteris (L.) Newman, *n* = 80; Russia, Republic of Khakassia, *IG, DU, RR & SG s.n.* (TK 003633).

Rhizomatopteris montana (Lam.) A.P.Khokhr. (≡ *Cystopteris montana* (Lam.) Bernh. ex Desv.), *n* = 84; Russia, Republic of Khakassia, *IG, DU, RR & SG s.n.* (TK 003631).

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All materials FCM; DNA ploidy levels estimated between 2008 and 2017 by P. Mereďa, Jr.; collectors: *AV* = A. Vinikarová, *DRL* = D.R. Letz, *IH* = I. Hodálová, *JK* = J. Kučera, *JS* = J. Smatanová, *MS* = M. Slovák, *MZ* = M. Zaliberová, *PM* = P. Mereďa, Jr., *VF* = V. Feráková; vouchers in SAV.

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ASTERACEAE

Jacobaea vulgaris Gaertn. subsp. *vulgaris* var. *vulgaris*

2*n* ~ 4*x* ~ 40; Belgium, *PM & DRL 179-1*, *PM & DRL 179-2*, *PM & DRL 179-3*, *PM & DRL 179-4*, *PM & DRL 179-5*, *PM & DRL 179-6*, *PM & DRL 179-7*, *PM & DRL 179-8*, *PM & DRL 179-9*, *PM & DRL 179-10*, *PM & DRL 179-11*, *PM & DRL 179-12*, *PM & DRL 179-13*, *PM & DRL 179-14*, *PM & DRL 179-15*; Croatia, *IH & PM 63-1*, *IH & PM 63-2*, *IH & PM 63-3*, *IH & PM 63-4*, IH & *PM 63-5*; Czech Republic, *VF 217-1*, *JK & MS 160-1*, JK & *MS 160-2*, *JK & MS 160-3*, *JK & MS 160-4*, *JK & MS 160-5*, *JK & MS 160-6*, *JK & MS 160-7*, *JK & MS 160-8*, *JK & MS 160-9*, *JK & MS 160-10*; Denmark, *IH & PM 196-1*, *IH & PM 196-2*, IH & PM *196-3*; France, *IH & VF 154-1*, *IH & VF 154-2*, *IH & VF 154-3*, IH & *VF 154-4*; Germany, *PM & DRL 177-1*, *PM & DRL 177-2*, *PM & DRL 177-3*, *PM & DRL 185-1*; Netherlands, *PM & DRL 178-1*, *PM & DRL 178-2*, *PM & DRL 178-3*. Poland, *JK & MS 161-1, JK & MS 161-2, JK & MS 161-3, JK & MS 161-4, JK & MS 161-5, JK & MS 161-6, JK & MS 161-7, JK & MS 161-8, JK & MS 161-9, JK & MS 161-10*; Romania, *IH*, *PM & MZ 355-1*, *IH*, *PM & MZ 355-2*, *IH*, *PM & MZ 355-3*, *IH*, *PM & MZ 355-4*, *IH*, *PM & MZ 355-5*, *IH*, *PM & MZ 355-6*, *IH*, *PM & MZ 355-7*, *IH*, *PM & MZ 355-8*, *IH*, *PM & MZ 355-9*, *IH*, *PM & MZ 355-10*, *IH*, *PM & MZ 355-11*, *IH*, *PM & MZ 355-12*, *IH*, *PM & MZ 356-1*, *IH*, *PM & MZ 356-2*, *IH*, *PM & MZ 356-3*, *IH*, *PM & MZ 356-4*, *IH*, *PM & MZ 356-5*; Slovak Republic, *PM 354-1*, *PM 354-2*, *PM 349A-1*, *PM 363-1, IH & PM 18-4*, *IH & PM 18-5*, *IH & PM 18-6*, *IH & PM 18-7*, IH & *PM 18-8*, *IH & PM 18-9*, *IH & PM 18-10*; Sweden, *IH*, *PM & DRL 193-1*, *IH*, *PM & DRL 193-2*; Ukraine, *JS 152-1*, *JS 152-2*, *JS 152-3*, *JS 152-4*, *JS 152-5*, *JS 152-6*, *JS 152-7*, *JS 151-1*, *JS 151-2*, *JS 151-3*, *JS 151-4*, *JS 151-5*, *JS 151-6*, *JS 151-7*, *JS 153-1*, *JS 153-2*, *JS 153-3*, *JS 153-4*, *JS 153-5*, *JS 153-6*, *JS 153-7*.

Jacobaea vulgaris subsp. *pannonica* Hodálová & Mereďa

2*n* ~ 8*x* ~ 80; Czech Republic, *AV 117-1*, *AV 117-2*, *AV 117-3*, *AV 117-4*, *AV 117-5*, *AV 116-1*, *AV 116-2*, *AV 116-3*, *AV 116-4*; Hungary, *PM 230-1*, *PM 232-1*, *PM 232-2*, *PM 232-3*, *PM 232-4*, *PM 232-5*, *PM 232-6*; Romania, *PM*, *IH & MZ 357-1*, *PM*, *IH & MZ 357-2*, *PM*, *IH & MZ 357-3*; Slovak Republic, *PM 342-1*, *PM 342-2*, *PM 342-3*, *PM 342-4*, *PM 342-5*, *PM 342-6*, *PM 358-1*, *PM 358-2*, *PM 358-3*, *PM 359-1*, *PM 359-2*, *PM 359-3*, *PM 359-4*, *PM 360-1*, *PM 360-2*, *PM 361-1*, *PM 361-2*, *PM 362-1*, *PM 362-2*, *PM 362-3*, *PM 362-4*, *PM 362-5*, *PM 347-1*, *PM 349B-1*, *PM 349B-2*, *PM 349B-3*, *PM 348-1*, *PM 364-1*, *PM 351-1*, *PM 351-2*.

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POACEAE

Aristida mutabilis Trin. & Rupr., *n* = 22; *NK 33815.*

Aristida redacta Stapf (= *Stipa aristoides* Stapf ex Lisboa), *n* = 18; *NK 31906.*

Arthraxon lanceolatus (Roxb.) Hochst., *n* = 14; *NK 31944*, *NK 31970.*

Arthraxon lancifolius (Trin.) Hochst., *n* = 14; *NK 31964.*

Brachiaria distachya (L.) Stapf, *n* = 9; *NK 31984.*

Brachiaria lata var. *pubescens* C.E.Hubb, *n* = 16; *NK 31926*, *NK 31983.*

Brachiaria ramosa var. *pubescens* Basappa & Muniy., *n* = 24; *NK 31937, NK 31981.*

Dichanthium pertusum (L.) Clayton, *n* = 40; *NK 31933.*

Dignathia hirtella Stapf, *n* = 10; *NK 31931.*

Diplachne fusca (L.) P.Beauv. ex Roem. & Schult. *n* = 10; *NK 31915.*

Echinochloa colona (L.) Link, *n* = 9; *NK 31961.*

Echinochloa crus-pavonis (Kunth) Schult., *n* = 9; *NK 33856.*

Eriochloa procera (Retz.) C.E.Hubb, *n* = 27; *NK 33869.*

Panicum turgidum Forssk, *n* = 18; *NK 33809.*

Paspalidium punctatum (Burm.) A.Camus, *n* = 9; *NK 33817.*

Rhynchelytrum repens (Willd.) C.E.Hubb. *n* = 27; *NK 31908.*

Schoenefeldia gracilis Kunth, *n* = 18; *NK 33871.*

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All materials CHN; collectors: *AAK* = Aleksandr A. Korobkov, *VID* = Vladimir I. Dorofeev; vouchers of Asteraceae in LE, duplicate of voucher of *Artemisia disjuneta* Krasch. in UBA and voucher of *Colpodium versicolor* Woronow ex Grossh. in IRK.

The study was supported by the Russian Foundation for Basic Research (research grants no. 15-04-05372 & 16-04-00052).

ASTERACEAE (COMPOSITAE)

Achillea asiatica Serg., 2*n* = 18; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-48.*

Artemisia adamsii Besser, 2*n* = 18; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-1.*

Artemisia altaiensis Krasch., 2*n* = 54; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-10*, *VID, AAK & al. 2016-11*, *VID, AAK & al. 2016-14.*

Artemisia argyrophylla Ledeb., 2*n* = 18; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-8*, *VID, AAK & al. 2016-9.*

Artemisia changaica Krasch., 2*n* = 18; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-46.*

Artemisia commutata Besser, 2*n* = 18; Mongolia, Khentii Aimak, *AAK 2012-32*; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-30*, *VID, AAK & al. 2016-32*, *VID, AAK & al. 2016-33*, *VID, AAK & al. 2016-119.*

Artemisia depauperata Krasch., 2*n* = 36; Mongolia, Gov'-Altai Aimak, *VID, AAK & al. 2016-34*; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-35*, *VID, AAK & al. 2016-36*; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-31.*

Artemisia disjuncta Krasch., 2*n* = 18; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-3.*

Artemisia dolosa Krasch., 2*n* = 36; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-29.*

Artemisia dracunculus L., 2*n* = 36; Mongolia, Gov'-Altai Aimak, *VID, AAK & al. 2016-45*; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-42*, *VID, AAK & al. 2016-41*, *VID, AAK & al. 2016-43*; Mongolia, Bulgan Aimak, *VID, AAK & al. 2016-44.*

Artemisia frigida Willd., 2*n* = 18; Mongolia, Bulgan Aimak, *VID, AAK & al. 2016-12.* 2*n* = 36; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-13*, *VID, AAK & al. 2016-19*, *VID, AAK & al. 2016-15*, *VID, AAK & al. 2016-16*, *VID, AAK & al. 2016-17*; Mongolia, Gov'-Altai Aimak, *VID, AAK & al. 2016-18.*

Artemisia integrifolia L., 2*n* = 36; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-20*, *VID, AAK & al. 2016-21.*

Artemisia leucophylla Turcz. ex C.B.Clarke, 2*n* = 16; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-23.*

Artemisia macilenta (Maxim.) Krasch., 2*n* = 36; Mongolia, Khentii Aimak, *AAK 2012-30.*

Artemisia macrocephala Jacquem. ex Besser, 2*n* = 18; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-7.*

Artemisia mongolica Fisch. ex Besser, 2*n* = 16; Mongolia, Gov'-Altai Aimak, *VID, AAK & al. 2016-26*; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-25*, *VID, AAK & al. 2016-27*; Mongolia, Bulgan Aimak, *VID, AAK & al. 2016-22*, *VID, AAK & al. 2016-24.*

Artemisia monostachya Bunge ex Maxim., 2*n* = 36; Mongolia, Khentii Aimak, *AAK 2012-31.*

Artemisia palustris L., 2*n* = 18; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-2.*

Artemisia phaeolepis Krasch., 2*n* = 36; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-5*, *VID, AAK & al. 2016-6*; Mongolia, Bulgan Aimak, *VID, AAK & al. 2016-4.*

Artemisia pycnorhiza Ledeb., 2*n* = 36; Mongolia, Bayankhongor Aimak, *VID, AAK & al. 2016-28*, *VID, AAK & al. 2016-39*, *VID, AAK & al. 2016-40.*

Artemisia scoparia Waldst. & Kit., 2*n* = 16; Mongolia, Bulgan Aimak, *VID, AAK & al. 2016-38.* 2*n* = 18; Mongolia, Bulgan Aimak, *VID, AAK & al. 2016-37.*

Artemisia xylorrhiza Krasch. ex Filatova, 2*n* = 36; Mongolia, Gov'-Altai Aimak, *VID, AAK & al. 2016-47.*

Dendranthema zawadskii (Herbich) Tzvelev, 2*n* = 54, 72; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-49.*

Neopallasia pectinata (Pall.) Poljakov, 2*n* = 18; Mongolia, Gov'-Altai Aimak, *VID, AAK & al. 2016-51.*

Tanacetum boreale Fisch. & DC., 2*n* = 18; Mongolia, Uverkhangai Aimak, *VID, AAK & al. 2016-50.*

POACEAE (GRAMINEAE)

Colpodium versicolor (Steven) Schmalh., 2*n* = 4; Russia, Republic of Dagestan, *V.V. Kotseruba 44932.*

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The study was supported by the Russian Foundation for Basic Research (research grants no. 15-04-05372 & 16-04-00052). Chromosome count for *Hedysarum zundukii* Peschkova, *Oxytropis caespitosa* Pers. and *O. peschkovae* Popov was supported by the Russian Science Foundation (grant 16-16-00080).

ASTERACEAE (COMPOSITAE)

Bidens pilosa L., 2*n* = 72; China, Province Henan, *DAK 37534* (IRK).
Conyza bonariensis (L.) Cronquist, 2*n* = 54; Italy, *YuKV 45307* (IRK), *YuKV 45311* (IRK).
Conyza canadensis (L.) Cronquist, 2*n* = 18; Russia, Moscow city, *YuKV 45312* (IRK).
Conyza ×rouyana Sennen (= *C. canadensis* (L.) Cronquist × *C. sumatrensis* (Retz.) E.Walker), 2*n* = 54; Italy, *YuKV 45310* (IRK), *YuKV 45308* (IRK).
Conyza sumatrensis (Retz.) E.Walker, 2*n* = 54; Italy, *YuKV 45306* (IRK), *YuKV 45309* (IRK).

BORAGINACEAE

Craniospermum subvillosum Lehm., 2*n* = 24; Russia, Irkutskaya Oblast', *AVV & al. 15852* (IRK).

EPHEDRACEAE

Ephedra procera C.A.Mey., 2*n* = 14; Russia, Republic of Dagestan, *A.R. Gabibova 43554* (IRK).

FABACEAE (LEGUMINOSAE)

Astragalus cicer L., 2*n* = 64; Russia, Novosibirskaya Oblast', *DAK 43566* (IRK).
Astragalus inopinatus Boriss., 2*n* = 16; Russia, Republic of Buryatiya, *SGK 16191* (IRK).
Astragalus rytyensis Stepants., 2*n* = 48; Russia, Irkutskaya Oblast', *DAK 32973* (IRK).
Entada rheedii Spreng., 2*n* = 28; Sri Lanka, Jul 2015, *N.V. Ozolina s.n.* (IRK).
Hedysarum razoumowianum Helm. & Fisch. ex DC., 2*n* = 32; Russia, Orenburgskaya Oblast', Jun 2013, *Yu.Z. Tabul'din s.n.* (SVER).
Hedysarum tscherkassovae var. *intermedium* Knjaz., 2*n* = 48; Russia, Orenburgskaya Oblast', 1 Aug 2009, *MSK s.n.* (SVER).
Hedysarum zundukii Peschkova, 2*n* = 16; Russia, Irkutskaya Oblast', *AVV & Yu.N. Pochinchik 9563* (IRK).
Lathyrus humilis (Ser.) Spreng., 2*n* = 14; Russia, Irkutskaya Oblast', *SGK & AVV 24694* (IRK).
Medicago cancellata M.Bieb., 2*n* = 16; Russia, Orenburgskaya Oblast', 3 Aug 2008, *MSK s.n.* (SVER).
Oxytropis caespitosa Pers., 2*n* = 48; Russia, Republic of Buryatiya, *SGK 12872* (IRK).
Oxytropis deflexa DC., 2*n* = 16; Russia, Irkutskaya Oblast', *AVV & al. 2284* (IRK); Russia, Republic of Buryatiya, *SGK 19774* (IRK).
Oxytropis knjazevii Vasjukov (≡ *Oxytropis tatarica* Knjaz.), 2*n* = 16; Russia, Republic of Bashkortostan, 12 Jul 2009, *MSK s.n.* (SVER); Russia, Orenburgskaya Oblast', 4 Aug 2009, *MSK s.n.* (SVER), 4 Aug 2008, *MSK s.n.* (SVER), 17 Jul 2009, *MSK s.n.* (SVER).
Oxytropis peschkovae Popov, 2*n* = 48; Russia, Irkutskaya Oblast', *AVV & DAK 9562* (IRK).
Vicia cracca L., 2*n* = 14; Russia, Republic of Buryatiya, *AVV 19388* (IRK); Russia, Irkutskaya Oblast', *SGK 29147* (IRK).
Vigna marina (Burm.) Merr., 2*n* = 22; Sri Lanka, *N.V. Ozolina 46371* (IRK).

IRIDACEAE

Iris glaucescens Bunge, 2*n* = 24; Kazakhstan, Pavlodarskaya Oblast', *DAK 40267* (IRK).
Iris ruthenica Ker Gawl., 2*n* = ca. 80; Russia, Republic of Altai, *SGK 30072* (IRK).

LILIACEAE

Lilium pilosiusculum (Freyn) Miscz., 2*n* = 24; Russia, Republic of Buryatiya, *SGK & Yu.N. Pochinchik 46483* (IRK).

LYCOPODIACEAE

Lycopodium annotinum L., 2*n* = 68; Russia, Irkutskaya Oblast', *SGK & DAK 45291* (IRK).

NELUMBONACEAE

Nelumbo nucifera Gaertn., 2*n* = 16; Russia, Republic of Dagestan, *R.A. Murtazaliev 45230* (IRK).

OPHIOGLOSSACEAE

Ophioglossum vulgatum L., 2*n* = ca. 480; Russia, Leningradskaya Oblast', *P.G. Efimov 42273* (IRK).

RANUNCULACEAE

Arsenjevia baikalensis (Fisch. ex Turcz.) Starod., 2*n* = 28; Russia, Republic of Buryatiya, *SGK 21131* (IRK).

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POACEAE

Poa nemoralis L.
2*n* = 42; Tajikistan, Ridge Petr I, *MO 12-52.*
2*n* = 20;[1] 42; Tajikistan, Ridge Petr I, *MO 12-49.*
2*n* = 35; 42; Tajikistan, Gissar Ridge, *MO 12-38/1.*
Poa relaxa Ovcz.
2*n* = 18, 20, 32; 42; Tajikistan, Gissar ridge, *MO 12-57.*
2*n* = 28, 35; 28; 35; 42; Tajikistan, Ridge Petr I, *MO 12-45.*
2*n* = 38, 42; 42; Tajikistan, Gissar ridge, *MO 12-60/6.*
2*n* = 35; Tajikistan, Gissar ridge, *MO 12-60/1.*
2*n* = 42; Tajikistan, Ridge Petr I, *MO 12-47.*
2*n* = 42; Tajikistan, Ridge Petr I, *MO 12-48.*
2*n* = 42; Tajikistan, Ridge Petr I, *MO 12-38/2.*
2*n* = 42; Tajikistan, Ridge Petr I, *MO 12-44/1.*
2*n* = 42; Tajikistan, Ridge Petr I, *MO 12-46.*
2*n* = 42; Tajikistan, Gissar ridge, *MO 12-56/1.*
2*n* = 42; Tajikistan, Gissar ridge *MO 12-56/8.*

1 Chromosome numbers of different cells of the same sample are separated by a comma. Chromosome numbers of different samples are separated by semicolon.

2*n* = 35, 42; Tajikistan, Karateginskiy ridge, *MO 12-39/1.*
2*n* = 42; Tajikistan, Gissar ridge, *MO 12-56/6.*
2*n* = 42; Tajikistan, Gissar ridge, *MO 12-59/2.*
2*n* = 42; Tajikistan, Gissar ridge, *MO 12-60/5.*

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All materials CHN; vouchers in VLA except otherwise stated.

The study was supported by Federal Agency for Scientific Organizations program for support the bioresource collections.

AMARANTHACEAE

Kochia sieversiana (Pall.) C.A.Mey., 2*n* = 18; Russia, Primorskii Krai, *V.A. Nechaev 13090.*

AMARYLLIDACEAE

Allium splendens Willd. ex Schult. & Schult.f., 2*n* = 16; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13036.*

ASPHODELACEAE

Hemerocallis middendorffii Trautv. & C.A.Mey., 2*n* = 22; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13060.*

ASTERACEAE

Artemisia rubripes Nakai, 2*n* = 16; Russia, Primorskii Krai, *S.V. Prokopenko 12981*, *V.Yu. Barkalov 12581.*
Artemisia stolonifera (Maxim.) Kom., 2*n* = 36; Russia, Primorskii Krai, *V.A. Nechaev 12557.*
Leibnitzia anandria (L.) Turcz., 2*n* = 46; Russia, Primorskii Krai, *V.A. Nechaev 12967.*
Ligularia sibirica (L.) Cass., 2*n* = 60; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13022.*

BRASSICACEAE

Arabidopsis petraea (L.) V.I.Dorof., 2*n* = 16; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13038.*

CAMPANULACEAE

Campanula punctata Lam., 2*n* = 34; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13100.*

CAPRIFOLIACEAE

Lonicera caerulea L., 2*n* = 18; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13010.*

CARYOPHYLLACEAE

Stellaria longifolia Muhl. ex Willd., 2*n* = 26; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13007.*

CRASSULACEAE

Orostachys japonica (Maxim.) A.Berger, 2*n* = 24; Russia, Primorskii Krai, *V.A. Nechaev 13025.*
Orostachys spinosa (L.) Sweet, 2*n* = 24; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13023.*

ERICACEAE

Rhododendron aureum Georgi, 2*n* = 26; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13041.*
Rhododendron dauricum L., 2*n* = 26; Russia, Khabarovskii Krai, *P.V. Krestov 13020* (VBGI).

EUPHORBIACEAE

Euphorbia lucorum Rupr., 2*n* = 28; Russia, Primorskii Krai, *V.Yu. Barkalov 12620.*

FABACEAE

Lespedeza davurica (Laxm.) Schindl., 2*n* = 40; Russia, Primorskii Krai, *V.A. Nechaev 13085.*

GROSSULARIACEAE

Ribes komarovii Pojark., 2*n* = 16; Russia, Primorskii Krai, *V.A. Nechaev 13091.*

IRIDACEAE

Iris uniflora Pall. ex Link, 2*n* = 32; Russia, Primorskii Krai, *S.V. Prokopenko 12979*, *S.V. Prokopenko 12988.*
Iris ventricosa Pall., 2*n* = 28; Russia, Primorskii Krai, *V.A. Nechaev 12966.*

LAMIACEAE

Clinopodium chinense (Benth.) Kuntze, 2*n* = 20; Russia, Primorskii Krai, *V.A. Nechaev 13074.*
Lycopus alissoviae Prob., 2*n* = 22; Russia, Primorskii Krai, *V.Yu. Barkalov 7115.*
Lycopus hirtellus Kom., 2*n* = 22; Russia, Primorskii Krai, *V.Yu. Barkalov 8874-b.*
Mentha canadensis L., 2*n* = 36; Russia, Primorskii Krai, *V.A. Nechaev 12155.*

LILIACEAE

Lilium pumilum Redouté, 2*n* = 24+0–2B; Russia, Primorskii Krai, *V.A. Nechaev 12970.*

POACEAE

Arundinella anomala Steud., 2*n* = 34; Russia, Primorskii Krai, *V.A. Nechaev 11436.*
Arundinella hirta (Thunb.) Tanaka, 2*n* = 36; Russia, Primorskii Krai, *V.Yu. Barkalov 12660.*
Bromopsis flexuosa (Drobow) Tzvelev, 2*n* = 56; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13047.*
Chloris virgata Sw., 2*n* = 20; Russia, Primorskii Krai, *V.A. Nechaev 12886*, *V.A. Nechaev 13073.*
Dimeria neglecta Tzvelev, 2*n* = 14; Russia, Primorskii Krai, *S.V. Prokopenko 13065.*
Elymus amurensis (Drobow) Czerep., 2*n* = 28; Russia, Primorskii Krai, *S.V. Prokopenko 13076.* This specimen was erroneously referred to *E. gmelinii* (Trin.) Tzvelev by Probatova & al. (2017).
Festuca mollissima V.I.Krecz. & Bobr., 2*n* = 14; Russia, Primorskii Krai, *S.V. Prokopenko 12971.*
Festuca ovina L., 2*n* = 14; Russia, Primorskii Krai, *V.A. Nechaev 8840*, *V.A. Nechaev 11005.*

Poa skvortzovii Prob., 2*n* = 28; Russia, Primorskii Krai, *V.A. Nechaev 12767.* 2*n* = 42; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13049.* 2*n* = 56; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13044.*

Poa vorobievii Prob., 2*n* = 28; Russia, Primorskii Krai, *V.Yu. Barkalov 12630.*

Puccinellia hauptiana (Trin. ex V.I.Krecz.) Kitag., 2*n* = 28; Russia, Primorskii Krai, *S.V. Prokopenko 12977.*

PRIMULACEAE

Lysimachia volkovae Prob., 2*n* = 24; Russia, Primorskii Krai, *V.A. Nechaev 11875.*

ROSACEAE

Duchesnea indica (Andrews) Teschem., 2*n* = 42; Russia, Primorskii Krai, *V.A. Nechaev 13019.*

Spiraea elegans Pojark., 2*n* = 18; Russia, Khabarovskii Krai, *V.Yu. Barkalov 13011.*

VIOLACEAE

Viola austroussuriensis (W.Becker) Kom., 2*n* = 24; Russia, Primorskii Krai, *V.Yu. Barkalov 12974.*

Viola muehldorfii Kiss, 2*n* = 24; Russia, Primorskii Krai, *V.Yu. Barkalov 12975.*

Literature cited

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All materials CHN.

The study was supported by the Russian Foundation for Basic Research (research grant no. 16-04-00052) and Federal Agency for Scientific Organizations program for support the bioresource collections.

ASTERACEAE

Erigeron politus Fr., 2*n* = 18; Russia, Republic of Buryatia, *D.A. Krivenko 12984* (IRK, VLA).

Senecio nemorensis L., 2*n* = 40; Russia, Republic of Buryatia, *S.G. Kazanovsky 12991* (IRK, VLA).

Sonchus arvensis L., 2*n* = 36; Russia, Irkutskaya Oblast', *D.A. Krivenko 12986* (IRK, VLA).

Taraxacum ceratophorum (Ledeb.) DC., 2*n* = 16; Russia, Kamchatskii Krai, *O.A. Chernyagina & V.E. Kirichenko 13043* (VLA).

Taraxacum lateritium Dahlst., 2*n* = 24; Russia, Kamchatskii Krai, *O.A. Chernyagina & V.E. Kirichenko 13046* (VLA).

Taraxacum officinale F.H.Wigg. s.l., 2*n* = 24; Russia, Kamchatka Peninsula, *O.A. Chernyagina & V.E. Kirichenko 13048* (VLA).

Taraxacum soczavae Tzvelev, 2*n* = 24; Russia, Kamchatskii Krai, *O.A. Chernyagina & V.E. Kirichenko 13015* (VLA).

BRASSICACEAE

Descurainia sophia (L.) Webb ex Prantl, 2*n* = 28; Russia, Kamchatka Peninsula, *O.A. Chernyagina 13117* (VLA).

Isatis oblongata DC., 2*n* = 28; Russia, Irkutskaya Oblast', *D.A. Krivenko 12990* (IRK, VLA).

Rorippa palustris (L.) Besser, 2*n* = 32; Russia, Republic of Buryatia, *D.A. Krivenko 13003* (IRK, VLA).

CARYOPHYLLACEAE

Dianthus superbus L., 2*n* = 30; Russia, Irkutskaya Oblast', *D.A. Krivenko 12963* (IRK, VLA).

CELASTRACEAE

Parnassia palustris L., 2*n* = 18; Russia, Republic of Buryatia, *S.G. Kazanovsky 12959* (IRK, VLA).

EUPHORBIACEAE

Euphorbia virgata Waldst. & Kit., 2*n* = 60; Russia, Republic of Buryatia, *D.A. Krivenko 12965* (IRK, VLA).

FABACEAE

Astragalus suffruticosus DC., 2*n* = 16; Russia, Republic of Buryatia, *S.G. Kazanovsky 12435* (IRK, VLA).

Glycyrrhiza pallidiflora Maxim., 2*n* = 16; Russia, Khabarovskii Krai, *L.A. Antonova 32679* (IRK).

Trifolium arvense L., 2*n* = 14; Russia, Khabarovskii Krai, *D.A. Krivenko 45598* (IRK), *D.A. Krivenko 45601* (IRK).

IRIDACEAE

Iris biglumis Vahl, 2*n* = 40; Russia, Republic of Buryatia, *S.G. Kazanovsky 12994* (IRK, VLA).

Pardanthopsis dichotoma (Pall.) L.W.Lenz, 2*n* = 32; Russia, Zabaikal'skii Krai, *S.G. Kazanovsky 12826* (IRK, VLA).

LILIACEAE

Lilium pilosiusculum (Freyn) Miscz., 2*n* = 24; Russia, Irkutskaya Oblast', *D.A. Krivenko 12956* (IRK, VLA).

OROBANCHACEAE

Rhinanthus serotinus Oborny, 2*n* = 14; Russia, Republic of Buryatia, *S.G. Kazanovsky 12040* (IRK, VLA).

PAEONIACEAE

Paeonia anomala L., 2*n* = 10; Russia, Irkutskaya Oblast', *D.A. Krivenko 13125* (IRK, VLA).

POACEAE

Agropyron peschkovae Tzvelev, 2*n* = 28; Russia, Irkutskaya Oblast', *D.A. Krivenko 12838* (IRK, VLA).

Anthoxanthum odoratum L., 2*n* = 20; Russia, Republic of Buryatia, *S.G. Kazanovsky 12995* (VLA, IRK).

Bromopsis inermis (Leyss.) Holub, 2*n* = 56; Russia, Kamchatka Peninsula, *O.A. Chernyagina 13087* (VLA).
Calamagrostis brachytricha Steud., 2*n* = 49; Russia, Primorskii Krai, *O.A. Chernyagina 13029* (VLA).
Dactylis glomerata L., 2*n* = 28; Russia, Irkutskaya Oblast', *O.P. Vin'kovskaya 12996* (IRK, VLA).
Danthonia riabuschinskii (Kom.) Kom., 2*n* = 36; Russia, Kamchatka Peninsula, *V.V. Buryi 13097* (VLA), *V.V. Buryi 13099* (VLA), *O.A. Chernyagina 13095* (VLA).
Elymus confusus (Roshev.) Tzvelev, 2*n* = 28; Russia, Kamchatka Peninsula, *V.V. Buryi 12819* (VLA).
Elymus sibiricus L., 2*n* = 28; Russia, Irkutskaya Oblast', *D.A. Krivenko 12982* (IRK, VLA).
Hordeum jubatum L., 2*n* = 28; Russia, Irkutskaya Oblast', *A.V. Verkhozina & D.A. Krivenko 12560* (IRK, VLA); Russia, Kamchatka Peninsula, *O.A. Chernyagina 13092* (VLA).
Poa alpigena Lindm., 2*n* = 70; Russia, Kamchatka Peninsula, *V.V. Buryi 13094* (VLA).
Poa czazhmensis Prob., 2*n* = 70; Russia, Kamchatskii Krai, *O.A. Chernyagina & V.E. Kirichenko 13123* (VLA).
Poa glauca Vahl, 2*n* = 56; Russia, Kamchatskii Krai, *O.A. Chernyagina 13039* (VLA).
Poa palustris L., 2*n* = 28; Russia, Kamchatka Peninsula, *O.A. Chernyagina & L. Shtreker 12714* (VLA), *V.V. Buryi 12712* (VLA).
Puccinellia hauptiana (Trin. ex V.I.Krecz.) V.I.Krecz., 2*n* = 28; Russia, Kamchatka Peninsula, *O.A. Chernyagina & L. Shtreker 12455* (VLA); Russia, Far East, Kamchatskii Krai, *O.A. Chernyagina 13028* (VLA).
Setaria pachystachys (Franch. & Sav.) Matsum., 2*n* = 18; Russia, Primorskii Krai, *D.A. Krivenko 12548* (IRK, VLA).
Trisetum molle Kunth, 2*n* = 28; Russia, Kamchatskii Krai, *O.A. Chernyagina & V.E. Kirichenko 13121* (VLA).

POLYGONACEAE

Rumex acetosella L., 2*n* = 28; Russia, Republic of Buryatia, *D.A. Krivenko 12983* (IRK, VLA).
Rumex patientia L., 2*n* = 40; Russia, Irkutskaya Oblast', *G.V. Matjashenko 12436* (IRK, VLA).

PRIMULACEAE

Androsace amurensis Prob., 2*n* = 20; Russia, Republic of Buryatia, *D.A. Krivenko 12997* (IRK, VLA).

SCROPHULARIACEAE

Scrophularia incisa Weinm., 2*n* = 48; Russia, Irkutskaya Oblast', *Yu.N. Pochinchik 12825* (IRK, VLA).

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All materials CHN; vouchers in VLA.

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ASTERACEAE

Bidens parviflora Willd., 2*n* = 24; Russia, Primorskii Krai, *V.T. Lapenko 11869.* 2*n* = 48; Russia, Primorskii Krai, *V.T. Lapenko 13096.*
Centaurea cyanus L., 2*n* = 24; Russia, Primorskii Krai, *V.T. Lapenko 13098.*
Crepis setosa Haller f., 2*n* = 12; Russia, Krasnodarskii Krai, *N.S. Probatova & V.P. Seledets 12347.*
Crepis tectorum L., 2*n* = 8; Russia, Khabarovskii Krai, *L.A. Antonova 13122.*
Galinsoga parviflora Cav., 2*n* = 16; Russia, Khabarovskii Krai, *L.A. Antonova 13112.*
Leontodon autumnalis L., 2*n* = 12; Russia, Khabarovskii Krai, *L.A. Antonova 13115*; Russia, Primorskii Krai, *E.G. Rudyka 13078.*
Pterocypsela indica (L.) C.Shih, 2*n* = 18; Russia, Primorskii Krai, *V.T. Lapenko 13103.*
Sigesbeckia pubescens (Makino) Makino, 2*n* = 30; Russia, Primorskii Krai, *E.G. Rudyka 11889.*
Taraxacum stepanovae Vorosch., 2*n* = 32; Russia, Kamchatskaya Oblast', Koryakskii Natsional'nyi Okrug, *A.P. Sokolovskaya 106.*

BORAGINACEAE

Lappula squarrosa (Retz.) Dumort., 2*n* = 24; Russia, Khabarovskii Krai, *L.A. Antonova 13109.*

CARYOPHYLLACEAE

Stellaria graminea L., 2*n* = 26; Russia, Khabarovskii Krai, *L.A. Antonova 13114.*

ERICACEAE

Rhododendron sichotense Pojark., 2*n* = 26; Russia, Primorskii Krai, *I.A. Nesterova 13032.*

FABACEAE

Vicia amurensis Oett., 2*n* = 12; Russia, Primorskii Krai, *N.S. Probatova & V.P. Seledets 9757.*
Vicia unijuga A.Braun, 2*n* = 12; Russia, Primorskii Krai, *N.S. Probatova & V.P. Seledets 7355*, *N.S. Probatova & V.P. Seledets 9758.*

IRIDACEAE

Iris uniflora Pall. ex Link, 2*n* = 32; Russia, Primorskii Krai, *G.M. Gulariants 12989.*

JUNCAGINACEAE

Triglochin maritima L., 2*n* = ca.80; Russia, Primorskii Krai, *N.S. Probatova & E.G. Rudyka 5516.*

MALVACEAE

Althaea officinalis L., 2*n* = 42; Russia, Krasnodarskii Krai, *N.S. Probatova & V.P. Seledets 11593.*

OXALIDACEAE

Xanthoxalis repens (Thunb.) Moldenke, 2*n* = 24; Russia, Amurskaya Oblast', *N.S. Probatova & V.P. Seledets 10694.*

Xanthoxalis stricta (L.) Small, 2*n* = 24; Russia, Primorskii Krai, *V.T. Lapenko 12681.*

PLANTAGINACEAE

Plantago depressa Willd., 2*n* = 12; Russia, Magadanskaya Oblast', *N.S. Probatova & V.P. Seledets 7186.*

Plantago lanceolata L., 2*n* = 12; Russia, Krasnodarskii Krai, *N.S. Probatova & V.P. Seledets 11772.*

POACEAE

Agrostis clavata Trin., 2*n* = 42; Russia, Primorskii Krai, *A.V. Gapeka 13001.*

Alopecurus aequalis Sobol., 2*n* = 14; Russia, Khabarovskii Krai, *L.A. Antonova 13113.*

Deschampsia amurensis Prob., 2*n* = 26; Russia, Amurskaya Oblast', *N.S. Probatova & E.G. Rudyka 4015*, *N.S. Probatova & V.P. Seledets 4458*, *E. Ivanykina 9632.*

Digitaria sanguinalis (L.) Scop., 2*n* = 36; Russia, Krasnodarskii Krai, *N.S. Probatova & V.P. Seledets 12354.*

Elymus sibiricus L., 2*n* = 28; Russia, Khabarovskii Krai, *L.A. Antonova 13111.*

Eragrostis pilosa (L.) P.Beauv., 2*n* = 40; Russia, Primorskii Krai, *N.S. Probatova & V.P. Seledets 12114.*

Festuca dahurica (St.-Yves) V.I.Krecz. & Bobrov, 2*n* = 14; Russia, Republic of Buryatia, *A. Gnutikov & Yu. Gnutikova 12234.*

Hordeum jubatum L., 2*n* = 28; Russia, Republic of Sakha (Yakutia), *I.A. Galanina 12926.*

Koeleria tokiensis Domin, 2*n* = 14; Russia, Primorskii Krai, *V.T. Lapenko 12446.*

Phleum pratense L., 2*n* = 42; Russia, Primorskii Krai, *A.V. Gapeka 13128.*

Poa badensis Haenke ex Willd., 2*n* = 42; Russia, Krasnodarskii Krai, *N.S. Probatova & V.P. Seledets 6969.*

Poa ×magadanensis Prob., 2*n* = 70-72; Russia, Kamchatka, *N.S. Probatova & V.P. Seledets 2232.*

Poa skvortzovii Prob., 2*n* = 42; Russia, Khabarovskii Krai, *A.V. Ermoshkin 12817.*

Poa tenkensis Prob., 2*n* = 28; Russia, Magadanskaya Oblast', *D.C. Lyssenko 11451*, *D.C. Lyssenko 11453.*

Poa transbaicalica Roshev., 2*n* = 42; Russia, Khabarovskii Krai, *G.V. Van 12009.*

Puccinellia dolicholepis V.I.Krecz., 2*n* = 28; Russia, Astrakhanskaya Oblast', *N.S. Probatova & V.P. Seledets 12012.*

Puccinellia hauptiana (Trin. ex V.I.Krecz.) V.I.Krecz., 2*n* = 28; Russia, Primorskii Krai, *G.M. Gulariants 12807.*

Puccinellia tzvelevii Ovczinnikova & Prob., 2*n* = 28; Russia, Primorskii Krai, *A.V. Gapeka 13075.*

Schizachne komarovii Roshev., 2*n* = 20; Russia, Kamchatka, *N.S. Probatova & V.P. Seledets 2255.*

Setaria glareosa Petrov, 2*n* = 18; Russia, Khabarovskii Krai, *L.A. Antonova 13118.*

Setaria maximowiczii Tzvelev & Prob., 2*n* = 18; Russia, Primorskii Krai, *V.T. Lapenko 11684.*

Setaria viridis var. *breviseta* (Döll) Hitchc., 2*n* = 18; Russia, Primorskii Krai, *V.T. Lapenko 12448.*

PRIMULACEAE

Primula farinosa L., 2*n* = 18; Russia, Primorskii Krai, *N.S. Probatova & V.P. Seledets 6591.*

ROSACEAE

Agrimonia striata Michx., 2*n* = 56; Russia, Primorskii Krai, *E.G. Rudyka 11883.*

Filipendula ulmaria (L.) Maxim., 2*n* = 14, 16; Russia, Novossibirskaya Oblast', *V.N. Kapustina 12985.*

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ASTERACEAE

Centaurea nigra L., *n* = 11. *RP 33684.*

Launaea fragilis (Asso) Pau, *n* = 8. *RP 33684.*

Pulicaria rajputanae Blatt. & Hollb., *n* = 9. *RP 33616.*

Sclerocarpus africanus Jacq. ex Murray, *n* = 18. *RP 33601.*

Sonchus oleraceus L., *n* = 24. *RP 31140. RP 31146.*

BORAGINACEAE

Arnebia hispidissima (Lehm.) A.DC, *n* = 16. *RP 31146.*

Heliotropium bacciferum Forssk., *n* = 22. *RP 31193.*

Heliotropium rariflorum Stocks, *n* = 24. *RP 31171.*

Heliotropium subulatum Hochst. ex DC., *n* = 28. *RP 31166.*

CONVOLVULACEAE

Convolvulus desertii Hochst. & Steud. ex Steud., *n* = 9. *RP 31688.*

Convolvulus glomeratus Choisy, *n* = 14. *RP 33627.*

Merremia umbellata (L.) Hallier f., *n* = 7. *RP 31690.*

LAMIACEAE

Lavandula multifida L., *n* = 11. *RP 31181.*

Leucas urticifolia (Vahl) Sm., *n* = 7. *RP 33607.*

Orthosiphon stamineus Benth., *n* = 12. *RP 33628.*

LOGANIACEAE

Spigelia anthelmia L., *n* = 16. *RP 33611.*

OROBANCHACEAE

Orobanche cernua Loefl., *n* = 12. *RP 31176.*

Striga gesnerioides (Willd.) Vatke, *n* = 20. *RP 3360.*

PLUMBAGINACEAE

Dyerophytum indicum Kuntze, *n* = 7. *RP 31128.*

RUBIACEAE

Borreria articularis (L.) F.N.Williams, *n* = 18. *RP 31150.*

SCROPHULARIACEAE

Scrophularia smithii Hornem., *n* = 20. *RP 33696.*

SOLANACEAE

Solanum seaforthianum Andrews, *n* = 24. *RP 31118.*

VERBENACEAE

Bouchea marrubifolia (Fenzl ex Walp.) Schauer, *n* = 20. *RP 33688.*

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POACEAE

Paspalum lilloi Hack., *n* = 10, 2*n* = 2*x* = 20, CHN; Argentina, Misiones, *E.J. Martinez 3* (CTES, MNES), *G.H. Rua 127* (BAA).

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MYRTACEAE

Eugenia aurata O.Berg, 2*n* = 44; Brazil, São Paulo, *I.R. Costa 429* (UEC).

Eugenia brasiliensis Lam., 2*n* = 22; Brazil, São Paulo, *I.R. Costa 483* (UEC).

Eugenia cerasiflora Miq., 2*n* = 22; Brazil, São Paulo, *I.R. Costa 513* (UEC).

Eugenia dysenterica DC., 2*n* = 33; Brazil. Minas Gerais, *I.R. Costa 455* (UEC); Brazil, Brasília, *I.R. Costa 525* (UEC).

Eugenia hyemalis Cambess., 2*n* = 22; Brazil, São Paulo, *I.R. Costa 426* (UEC). 2*n* = 44, Brazil, Minas Gerais, *I.R. Costa 442* (UEC).

Eugenia involucrata DC., 2*n* = 22; Brazil, São Paulo, *I.R. Costa 434* (UEC).

Eugenia klotzschiana O.Berg, 2*n* = 22, Brazil, Brasília, *I.R. Costa 637* (UEC). 2*n* = 33; Brazil, São Paulo, *I.R. Costa 509* (UEC).

Eugenia mosenii (Kausel) Sobral, 2*n* = 44; Brazil, São Paulo, *I.R. Costa 512* (UEC).

Eugenia multicostata D.Legrand, 2*n* = 22; Brazil, São Paulo, *I.R. Costa 519* (UEC).

Eugenia pitanga (O.Berg) Kiaersk., 2*n* = 22, Brazil, São Paulo, *I.R. Costa 503* (UEC). 2*n* = 44; Brazil, São Paulo, *I.R. Costa 459* (UEC).

Eugenia punicifolia (Kunth) DC., 2*n* = 22, Brazil. Minas Gerais, *I.R. Costa 454* (UEC); Brazil, São Paulo, *I.R. Costa 492* (UEC). 2*n* = 33, Brazil, Minas Gerais, *C.F. Verola 136* (EAC); Brazil, Bahia, *I.R. Costa 759* (EAC); Brazil, Ceará, *J.R. Lima 63* (EAC); Brazil, São Paulo, *I.R. Costa 648* (UEC). 2*n* = 44, Brazil, Bahia, *I.R. Costa 760* (EAC); Brazil, Minas Gerais, *I.R. Costa 701* (UEC); Brazil, Bahia, *I.R. Costa 755* (EAC).

Eugenia pyriformis Cambess., 2*n* = 22, Brazil, São Paulo, *I.R. Costa 491* (UEC). 2*n* = 33; Brazil, São Paulo, *I.R. Costa 508* (UEC).

Eugenia stictopetala DC., 2*n* = 22; Brazil, Ceará, *R.C. Costa s.n.* (EAC 35131).

Eugenia uniflora L., 2*n* = 22, Brazil, São Paulo, Campinas, *I.R. Costa 420* (UEC); Brazil, São Paulo, Campinas, *I.R. Costa 422* (UEC); Brazil, Rio de Janeiro, *I.R. Costa 603* (UEC).

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POACEAE

Mesosetum cayennense Steud., 2*n* = 20; Brazil, Goiás, *G.H. Rua & al. 940* (CEN, UB).
Mesosetum ferrugineum (Trin.) Chase, 2*n* = 60; Brazil, Distrito Federal, *M.W.S. Sousa & D.M. Ramos 64* (UB).
Mesosetum loliiforme (Hochst. ex Steud.) Chase, 2*n* = 16; Brazil, Goiás, *J.F.M Valls & al. 15896* (CEN); *J.F.M Valls & al. 15902* (CEN); *J.F.M Valls & al. 15914* (CEN). 2*n* = 24; Brazil, Distrito Federal, *M.W.S. Sousa & R.C. Oliveira 63* (UB). 2*n* = 32; Brazil, Distrito Federal, *M.W.S. Sousa & D.M. Ramos 66* (UB).
Mesosetum rottboellioides (Kunth) Hitchc., 2*n* = 20; Brazil, Minas Gerais, *P.A. Reis & M.W.S. Sousa 331* (UB).
Mesosetum sclerochloa (Trin.) Hitchc., 2*n* = 16; Brazil, Goiás, *R.C. Oliveira & C.W. Fagg 2810* (UB).

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ORCHIDACEAE

Brassavola ceboletta Rchb.f., 2*n* = 40; Brazil, Bahia, *L.P. Felix 13253.*
Brassavola tuberculata Hook., 2*n* = 40; Brazil, Paraíba, *L.P. Felix 12728.*
Cattleya aclandiae Lindl., 2*n* = 40; Brazil, Bahia, *L.P. Felix 14498.*
Cattleya cernua (Lindl.) Van den Berg, 2*n* = 40; Brazil, São Paulo, *L.P. Felix 12859.*
Cattleya crispata (Thunb.) Van den Berg, 2*n* = 80; Brazil, Minas Gerais, *L.P. Felix 15372.*
Cattleya elongata Barb.Rodr., 2*n* = 80; Brazil, Bahia, *L.P. Felix 14559.*
Cattleya grandis (Lindl. & Paxton) A.A.Chadwick, 2*n* = 40; Brazil, Bahia, *L.P. Felix 13201.*
Cattleya guttata Lindl., 2*n* = 40; Brazil, Bahia, *L.P. Felix 14450.*
Cattleya intermedia Graham, 2*n* = 40; Brazil, Rio Grande do Sul, *L.P. Felix 8973.*
Cattleya nobilior Rchb.f., 2*n* = 42; Brazil, Tocantins, *L.P. Felix 243.*
Cattleya pfisteri (Pabst & Senghas) Van den Berg, 2*n* = 40; Brazil, Bahia, *L.P. Felix 14501.*
Cattleya rupestris (Lindl.) Van den Berg, 2*n* = 40; Brazil, Minas Gerais, *L.P. Felix 15346.*
Cattleya sincorana (Schltr.) Van den Berg, 2*n* = 40; Brazil, Bahia, *L.P. Felix 14550.*
Cattleya tenuis Campacci & Vedov., 2*n* = 40; Brazil, Bahia, *L.P. Felix 15454.*
Cattleya walkeriana Gardner, 2*n* = 40; Brazil, Goiás, *E.M. Almeida, 508.*
Cattleya warneri T.Moore ex Warner, 2*n* = 40; Brazil, Bahia, *L.P. Felix 14502.*
Encyclia advena Brade, 2*n* = 40; Brazil, Alagoas, *J.M.P. Cordeiro 478.*
Encyclia andrichii L.C.Menezes, 2*n* = 40; Brazil, Bahia, *L.P. Felix 13391.*
Encyclia flava (Lindl.) Porto & Brade, 2*n* = 40; Brazil, Tocantins, *J.M.P. Cordeiro 714.*
Encyclia ionosma (Lindl.) Schltr., 2*n* = 40; Brazil, Minas Gerais, *L.P. Felix 15258.*
Encyclia jenischiana (Rchb.f.) Porto & Brade, 2*n* = 80; Brazil, Bahia, *L.P. Felix 13323.*
Encyclia oncidioides (Lindl.) Schltr., 2*n* = 40; Brazil, Bahia, *E.M. Almeida 693.*
Encyclia seidelii Pabst, 2*n* = 80; Brazil, Minas Gerais, *L.P. Felix 15373.*
Encyclia sp. aff. *osmantha*, 2*n* = 40; Brazil, Bahia, *L.P. Felix 13298.*
Encyclia sp., 2*n* = 40; Brazil, Bahia, *E.M. Almeida 733.*
Epidendrum armeniacum Lindl., 2*n* = 40; Brazil, Ceará, *L.P. Felix 15112.*
Epidendrum difforme Jacq., 2*n* = 40; Brazil, Alagoas, *L.P. Felix 14335.*
Epidendrum fulgens Brongn., 2*n* = 24; Brazil, Paraíba, *S. Nascimento 92.*
Epidendrum paniculatum Ruiz & Pav., 2*n* = 40; Brazil, Pernambuco, *L.P. Felix 12096.*
Isochilus linearis (Jacq.) R.Br., 2*n* = 40; Brazil, Pernambuco, *L.P. Felix 12716.*
Laelia marginata (Lindl.) L.O.Williams, 2*n* = 40; Brazil, Ceará, *L.P. Felix n.s.* (EAN 18715).
Prosthechea alagoensis (Pabst.) W.E.Higgins, 2*n* = 40; Brazil, Pernambuco, *E.M. Almeida 32.*
Prosthechea faresiana (Bicalho) W.E.Higgins, 2*n* = 80; Brazil, Bahia, *J.P. Castro 127.*
Prosthechea fragrans (Sw.) W.E.Higgins, 2*n* = 40; Brazil, Bahia, *L.P. Felix 13391.*
Scaphyglottis fusiformis (Griseb.) R.E.Schult., 2*n* = 40; Brazil, Bahia, *E.M. Almeida 1408.*
Scaphyglottis sickii Pabst., 2*n* = 40; Brazil, Alagoas, *J.M.P. Cordeiro 496.*

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All materials CHN. Collectors: *CH* = O. Chauveau & E. Heaton, *CP* = O. Chauveau & F. Pautz, *ESC* = L. Eggers & T.T. Souza-Chies, *OC* = Olivier Chauveau; living collections: Heaton = *Sisyrinchium* collection of the National Council for the Conservation of Plants and Gardens (NCCPG); UPSBG = Botanical Garden of the University Paris-Sud (France).

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We acknowledge the valuable collaboration of taxonomists Lilian Eggers and Camila Dellanhese Inácio in the species identification. We are also thankful to Olivier Chauveau and Christian Raquin for kindly provide seeds and plant samples from living collection of Iridaceae of Université Paris-Sud for our analysis.

IRIDACEAE

Sisyrinchium arenarium Poepp. subsp. *arenarium*, 2*n* = 18; Chile, Region VII, *OC H09047* (ICN).
Sisyrinchium chilense Hook., 2*n* = 32; Peru, *Eggers & al. H09004* (ICN).
Sisyrinchium commutatum Klatt, 2*n* = 18; Brazil, Paraná, *ESC 245* (ICN), *ESC 331* (ICN).
Sisyrinchium elmeri Greene, 2*n* = 34; U.S.A., California, *CH H09042* (ICN).
Sisyrinchium fiebrigii I.M.Johnst., 2*n* = 54; Brazil, Paraná, *ESC 325* (ICN).
Sisyrinchium hoehnei I.M.Johnst., 2*n* = 18; Brazil, Paraná, *ESC 375* (ICN).
Sisyrinchium laxinervium Ravenna, 2*n* = 36; Peru, *Eggers & al. 047-2011* (ICN, CUZ).
Sisyrinchium megapotamicum Malme, 2*n* = 32; Brazil, Rio Grande do Sul, *ESC 474* (ICN).
Sisyrinchium minus Engelm. & A.Gray, 2*n* = 26; Brazil, Santa Catarina, *ESC 230* (ICN).
Sisyrinchium ostenianum Beauverd, 2*n* = 18; Brazil, Rio Grande do Sul, *ESC 475* (ICN).
Sisyrinchium platycaule Baker, 2*n* = 18; Brazil, Paraná, *ESC 337* (ICN); Brazil, Rio Grande do Sul, *ESC 686* (ICN).
Sisyrinchium purpurellum Ravenna, 2*n* = 18; Brazil, Santa Catarina, *ESC 689* (ICN). 2*n* = 36; Brasil, Paraná, *ESC 625* (ICN).
Sisyrinchium scariosum I.M.Johnst., 2*n* = 18; Brazil, Santa Catarina, *ESC 235* (ICN). 2*n* = 36; Brazil, Rio Grande do Sul, *ESC 277* (ICN).
Sisyrinchium sellowianum Klatt, 2*n* = 18; Brazil, Rio Grande do Sul, *ESC 209* (ICN); Brazil, Santa Catarina, *ESC 238* (ICN). 2*n* = 36; Brazil, Rio Grande do Sul, *ESC 458* (ICN), *ESC 561* (ICN); Brazil, Paraná, *ESC 372* (ICN).
Sisyrinchium setaceum Klatt, 2*n* = 18; Brazil, Rio Grande do Sul, *ESC 214* (ICN); Brazil, Santa Catarina, *ESC 690* (ICN).
Sisyrinchium soboliferum Ravenna, 2*n* = 96; Brazil, Paraná, Vitorino, *ESC 381* (ICN).
Sisyrinchium tenuifolium Humb. & Bonpl. ex Willd., 2*n* = 36; Mexico, Veracruz, cultivated material number R09250 of UPSBG – France, *CP H09025* (ICN).
Sisyrinchium tinctorium Kunth, 2*n* = 36; Ecuador, *CP H09034* (ICN).
Sisyrinchium cf. *tofoense* Ravenna, 2*n* = 18; Chile, Region IV, *OC H09057* (ICN).
Sisyrinchium uliginosum Ravenna, 2*n* = 30; Brazil, Paraná, *ESC 393* (ICN).

IOPB COLUMN

Edited by Karol Marhold & Ilse Breitwieser

IAPT/IOPB chromosome data 26 [extended online version]

Edited by Karol Marhold & Jaromír Kučera

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

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* First chromosome count from Russia.
** First chromosome count from Magadanskaya Oblast'.

ALISMATACEAE

***Sagittaria natans* Pall.

2*n* = 22, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in 10 km to the north of Klyopka settlement, pool near thermokarstic lake in the foot of hill, 59°50′N, 151°28′E, 22 Jul 2015, *O. Mochalova M15034* (MAG).

DROSERACEAE

***Drosera anglica* Huds.

2*n* = 40, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of mouth of Yana River, near Priustievoi stream, in tundra, 59°46′N, 149°28′E, 15 Jul 2015, *O. Mochalova M15011* (MAG); Russia, North of Far East, Magadanskaya Oblast', near Kisi Lake, in sedge-sphagnum bog, 59°58′N, 152°36′E, 11 Jul 2016, *E. Andriyanova A16085* (MAG).

***Drosera rotundifolia* L.

2*n* = 20, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of mouth of Yana River, near Priustievoi stream, in tundra, 59°46′N, 149°28′E, 15 Jul 2015, *O. Mochalova M15012* (MAG); Russia, North of Far East, Magadanskaya Oblast', near Kisi Lake, in sedge-sphagnum bog, 59°58′N, 152°36′E, 11 Jul 2016, *E. Andriyanova A16086* (MAG).

HALORAGACEAE

***Myriophyllum verticillatum* L.

2*n* = 28, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Arman settlement, near the bridge over Shirokaya River, 59°46′N, 149°28′E, 13 Sep 2016, *O. Mochalova M16102* (MAG).

PLANTAGINACEAE

Callitriche palustris L.

2*n* = 20, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, near Kisi Lake, on the edge of pool around the lake, 59°58′N, 152°36′E, 11 Jul 2016, *E. Andriyanova A16084* (MAG); Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Arman settlement, near the bridge over Shirokaya River, on river bottom, 59°42′N, 150°01′E, 13 Sep 2016, *O. Mochalova M16110* (MAG).

***Hippuris tetraphylla* L.f.

2*n* = 32, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Arman settlement, near the bridge over Shirokaya River, in tundra pool, 59°42′N, 150°01′E, 20 May 2016, *E. Andriyanova & O. Mochalova A16005* (MAG).

POACEAE

***Alopecurus aequalis* Sobol.

2*n* = 14, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Ola settlement, Uglikanka River, non-freezing sand spits, 59°36′N, 151°18′E, 11 May 2016, *E. Andriyanova & O. Mochalova A16001* (MAG).

***Arctophila fulva* (Trin.) Andersson

2*n* = 42, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Arman settlement, near the bridge over Shirokaya River, on the edge of small lake in tundra, 59°42′N, 150°01′E, 7 Jul 2015, *Andriyanova & O. Mochalova A15006* (MAG).

***Deschampsia borealis* (Trautv.) Roshev.

2*n* = 26, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Ola settlement, Uglikanka River, non-freezing sand spits, 59°36′N, 151°18′E, 11 May 2016, *E. Andriyanova & O. Mochalova A16002* (MAG).

POTAMOGETONACEAE

***Potamogeton perfoliatus* L.

2*n* = 52, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, near Kisi Lake, south-east part of the lake, near the source of Khady River, on bottom of the lake, near the shore, on depth 0.5 m, 59°58′N, 152°36′E, 3 Jul 2016, *E. Andriyanova A16042* (MAG).

RANUNCULACEAE

Caltha palustris L.

2*n* = 32, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Arman settlement, near the bridge over Shirokaya River, in tundra pool, 59°42′N, 150°01′E, 20 May 2016, *E. Andriyanova & O. Mochalova A16004* (MAG); Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, lower reaches of Yama River, Neuter Stream, non-freezing sand spits, 153°16′N, 59°54′E, 11 Apr 2016, *O. Mochalova M16001* (MAG).

Ranunculus gmelinii DC.

2*n* = 16, Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Arman settlement, near the bridge over Shirokaya River, in tundra pool, 59°42′N, 150°01′E, 20 May 2016, *E. Andriyanova & O. Mochalova A16003* (MAG); 2*n* = 24, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, lower reaches of Yama River, Neuter Stream, non-freezing sand spits, 153°16′N, 59°54′E, 11 Apr 2016, *O. Mochalova M16002* (MAG).

***Ranunculus hyperboreus* Rottb.

2*n* = 32, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Arman settlement, near the bridge over Shirokaya River, in the edge of small lake in tundra, 59°42′N, 150°01′E, 7 Jul 2015, *E. Andriyanova & O. Mochalova A15002* (MAG); Russia, North of Far East, Chukotskii Avtonomnyi Okrug, Bilibinskii Raion, upper course of Karalveem River, west slope of Kekura mountain, on the edge of artificial pool, 66°56′N, 166°51′E, 17 Jul 2015, *E. Andriyanova A15084* (MAG).

***Ranunculus sarmentosus* Adams

2*n* = 16, CHN. Russia, North of Far East, Magadanskaya Oblast', Severo-Evenskii Raion, in the vicinity of Evensk settlement, near the mouth of Malaya Garmanda River, seaside meadow, 61°52′N, 159°23′E, 13 Jun 2016, *O. Mochalova M16020* (MAG); Russia, North of Far East, Magadanskaya Oblast', in vicinity of Magadan, lower reaches of Magadanka River, in floodplain of the river, on ground road between two small lakes, 59°33′N, 150°52′E, 29 Jul 2016, *O. Vokhmina M16091* (MAG).

Ranunculus trichophyllus Chaix

2*n* = 32, CHN. Russia, Republic of Sakha (Yakutia), Srednekolymskii Raion, 73 km to SSW from Srednekolymsk, right bank of Kolyma River, west part of Pyrnaeva Lake, 66°54′N, 152°45′E, 14 Aug 2015, *O. Mochalova & A. Bobrov s.n.* (IBIW).

TYPHACEAE

**Sparganium natans* L.

2*n* = 30, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in the vicinity of Arman settlement, near the bridge over Shirokaya River, small lake in tundra, 59°42′N, 150°01′E, 7 Jul 2015, *E. Andriyanova & O. Mochalova A15003* (MAG).

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Smirnov, Yu.A. 1968. Uskorennyi metod issledovaniya somaticheskikh khromosom plodovykh = Accelerated method for studying somatic chromosomes in fruit trees. *Tsitologiya* 10: 1132–1134.

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* First chromosome count for the species.
** First chromosome count from the Kazakhstan Republic.
▼ New chromosome number (cytotype) for the taxon.

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ALLIACEAE

Allium globosum M.Bieb. ex DC.

2*n* = 16, CHN. Kazakhstan, Karagandinskaya Oblast', Aktogaiskii Raion, Bektauata Mountain, granite outputs, 47°45.506′N, 74°89.074′E, 1 Aug 2013, *E.A. Korolyuk 19/261* (NS).

Allium pallasii Murray

2*n* = 16, CHN. Kazakhstan, Vostochno-Kazakhstanskaya Oblast', Ayagozskii Raion, Kazakh Melkosopochnik, Ajgyz River valley, Akshatau Ridge, solonchak, 666 m, 47°35′01.0″N, 79°31′18.8″E, 5 Jun 2014, *T.V. An'kova 258* (NS) [Fig. 1A].

AMARANTHACEAE

Atriplex fera (L.) Bunge

2*n* = 18, CHN. Russia, Altay Republic, Kosh-Agachskii Raion, between Zhana-Aul and Tashanta villages, solonchak, 1904 m, 49°49.332′N, 88°56.832′E, 3 Sep 2009, *E.A. Korolyuk 64* (NS) [Fig. 1D].

Chenopodium album L.

2*n* = 54, CHN. Kazakhstan, Almatinskaya Oblast', Alakolskii Raion, Dzhungarskii Alatau Ridge, Lepsinsk village vicinity, Chernaya rechka, Zhongar-Alatauskii National Park, Lepsinsk branch, cordon, 1238 m, 45°52.036′N, 80°87.1475′E, 26 Aug 2014, *E.A. Korolyuk 61* (NS); Kazakhstan, Almatinskaya Oblast', Alakolskii Raion, Dzhungarskii Alatau Ridge, Lepsinsk village, forestry nurseries, 1011 m, 45°52.576′N, 80°61.700′E, 28 Aug 2014, *E. Korolyuk 66* (NS); Kazakhstan, Almatinskaya Oblast', highway "Karaganda–Almata", Kapchagai reservoir vicinity, southern petrophytic slope, 44°21.360′N, 75°68.319′E, 29 Aug 2014, *E.A. Korolyuk 71* (NS) [Fig. 1E]; Kazakhstan, Almatinskaya Oblast', Alalkolskii Raion, Lepsinsk village vicinity, apple forest belt, meadow grass, 544 m, 45°36′N, 80°37′E, 23 Aug 2014, *E.A. Korolyuk 52a* (NS); Kazakhstan, Almatinskaya Oblast', Alalkolskii Raion, Dzhungarskii Alatau Ridge, Lepsinsk village vicinity, forbs steppe, 1306 m, 45°58.77′N, 80°64.180′E, 28 Aug 2014. *E.A. Korolyuk 67* (NS).

Chenopodium novopokrovskyanum (Aellen) Uotila

2*n* = 36, CHN. Russia, Zabaikal'sky Krai, Aginskii Raion, W of Nozhei Lake, steppe, 23 Aug 2012, *A.Yu. Korolyuk 827* (NS); Kazakhstan, Almatinskaya Oblast', highway "Karaganda–Almata", Kapchagai reservoir vicinity, rocky outputs, 1000 m, 44°23.195′N, 77°71.120′E, 22 Aug 2014, *E.A. Korolyuk 47b* (NS); Kazakhstan, Almatinskaya Oblast', Alakolskii Raion, Lepsy village, road-side, 544 m, 45°36′N, 80°37′E, 23 Aug 2014, *E.A. Korolyuk 52c* (NS).

Chenopodium strictum Roth

2*n* = 36, CHN. Kazakhstan, Almatinskaya Oblast', highway "Karaganda–Almata", Kapchagai reservoir vicinity, 44°21.360′N, 75°68.319′E, 22 Aug 2014, *E.A. Korolyuk 46* (NS).

Krascheninnikowia ceratoides (L.) Gueldenst.

2*n* = 18, CHN. Russia, Tyva Republic, Tes-Chemtskii Raion, Ak-Chyra village vicinity, Choolu River valley, pebbles, 816 m, 50°70.480′N, 93°34.650′E, 5 Sep 2013, *A.Yu. Korolyuk & E.A. Korolyuk 36* (NS).

Oxybasis glauca (L.) S.Fuentes, Uotila & Borsch

2*n* = 18, CHN. Kazakhstan, Karagandinskaya Oblast', Balkhashskii Akimat, Balkhash town, weed on the street, 374 m, 46°84.832′N, 74°96.950′E, 21 Aug 2014, *E.A. Korolyuk 42* (NS).

APOCYNACEAE

Cynanchum sibiricum Willd.

*2*n* = 22, CHN. Kazakhstan, Zhambylskaya Oblasť, Moiynkumskii Raion, Balkhash Lake vicinity, 20 km to the south of the Burybajtala village, 333 m, 44°85.853′N, 74°15.556′E, 30 Aug 2014, *E.A. Korolyuk 74/257* (NS).

ASTERACEAE

Cancrinia discoidea (Ledeb.) Poljakov ex Tzvelev

2*n* = 14, CHN. Kazakhstan, Almatinskaya Oblasť, Aksujskii Raion, SE Balkhash Lake, Kokunyten mountains, granites, 413 m, 46°17′17.4″N, 78°24′05.4″E, 8 Jun 2014, *T.V. An'kova 253* (NS).

Chondrilla leiosperma Kar. & Kir.

2*n* = 18, CHN. Kazakhstan, Almatinskaya Oblasť, Alakolskii Raion, Dzhungaskii Alatau Ridge, between Lepsinsk village & Yugentas outpost, southern stony slope on the border with a spruce forest, 1931 m, 45°46.788′N, 80°83.397′E, 23 Aug 2014, *E.A. Korolyuk 53/283* (NS).

Inula britannica L.

2*n* = 16, CHN. Kazakhstan, Karagandinskaya Oblasť, Aktogaiskii Raion, Bektauata mountain, Sary-Karagash, granites, log of the dried temporary watercourse, 47°46.799′N, 74°73.429′E, 21 Aug 2014, *E.A. Korolyuk 40/292* (NS).

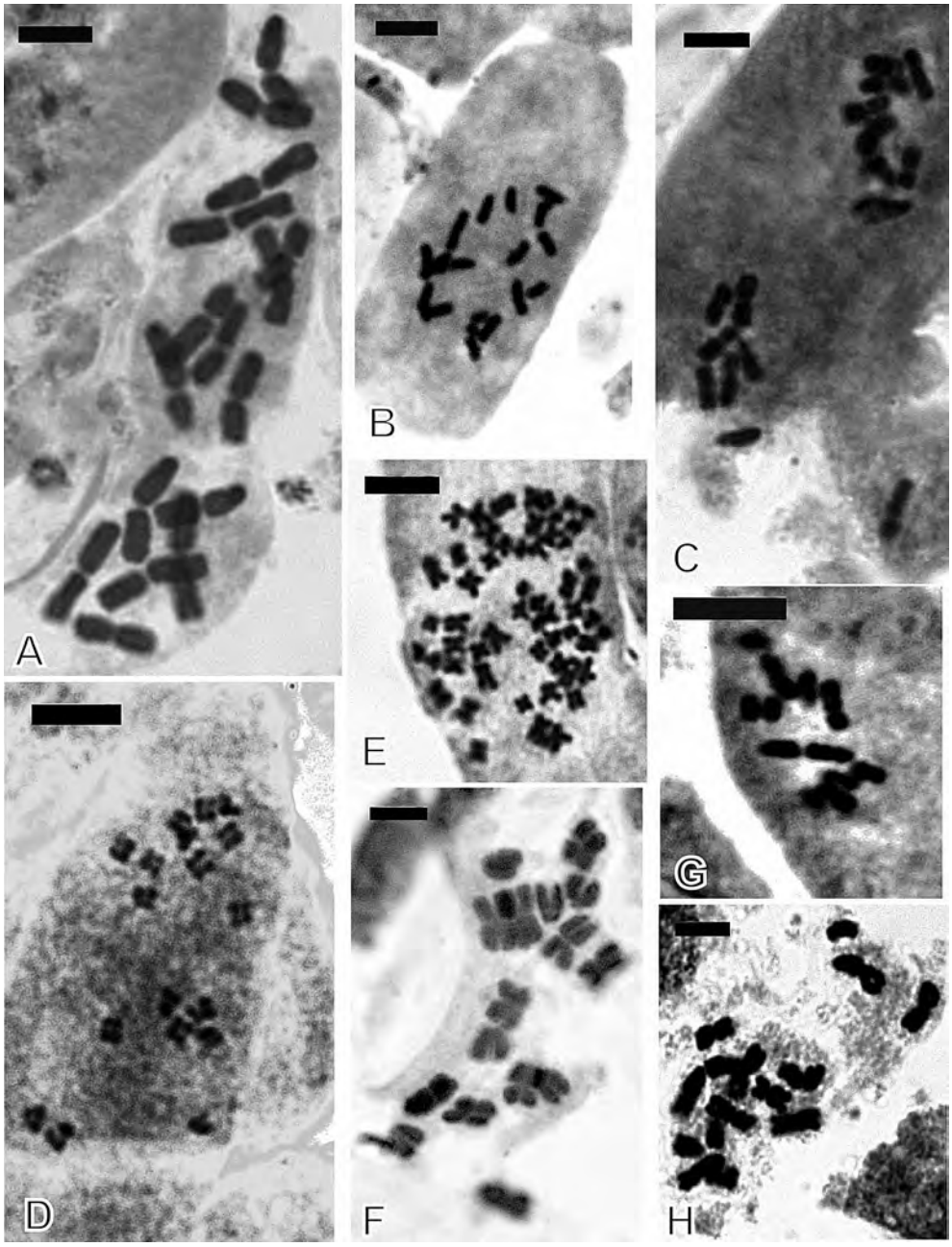

Fig. 1. Mitotic metaphases: **A,** *Allium pallasii*, 2*n* = 16; **B,** *Solidago virgaurea*, 2*n* = 16; **C,** *Tripleurospermum ambiguum*, 2*n* = 16; **D,** *Atriplex fera*, 2*n* = 18; **E,** *Chenopodium album*, 2*n* = 54; **F,** *Lotus praetermissus*, 2*n* = 12; **G,** *Clematis songorica*, 2*n* = 16; **H,** *Reaumuria turkestanica*, 2*n* = 16. — Scale bars = 5 µm.

Lactuca serriola L.

2*n* = 18, CHN. Kazakhstan, Zhambylskaya Oblasť, Takum Desert, highway between Kanshengel and Kurty villages, 44°21.360′N, 75°68.319′E, 22 Aug 2014, *E.A. Korolyuk 45/291* (NS).

Solidago virgaurea L.

▼2*n* = 16, CHN. Kazakhstan, Almatinskaya Oblasť, Alakolskii Raion, Dzhungarskii Alatau Ridge, between Lepsinsk village & Yugentas outpost, southern stony slope on the border with a spruce forest, 1931 m, 45°46.788′N, 80°83.397′E, 23 Aug 2014, *E.A. Korolyuk 53/284* (NS) [Fig. 1B].

Tripleurospermum ambiguum (Ledeb.) Franch. & Sav.

▼2*n* = 16, CHN. Kazakhstan, Almatinskaya Oblasť, Alakolskii Raion, Dzhungarskii Alatau Ridge, Sarymsakty River, Lepsinsk village vicinity, sedge meadow, 2398 m, 45°38.435′N, 80°82.291′E, 25 Aug 2014, *E.A. Korolyuk 58/293* (NS) [Fig. 1C].

FABACEAE

Lotus praetermissus Kuprian.

*2*n* = 12, CHN. Kazakhstan, Karagandinskaya Oblasť, Aktogaiskii Raion, Bektauata Mountain, pastured meadow, 47°45.506′N, 74°89.074′E, 1 Aug 2013, *E.A. Korolyuk 18/*265 (NS) [Fig. 1F].

RANUNCULACEAE

Anemonastrum schrenkianum (Juz.) Holub

(≡ *Anemone schrenkiana* Juz.)

*2*n* = 16, CHN. Kazakhstan, Almatinskaya Oblasť, Alakolskii Raion, Dzhungarskii Alatau Ridge, Lepsinsk village vicinity, Sarymsakty River, steppe sedge, 2300 m, 45°38.435′N, 80°82.291′E, 25 Aug 2014, *E.A. Korolyuk* 60/267 (NS).

Clematis songorica Bunge

**2*n* = 16, CHN. Kazakhstan, Almatinskaya Oblasť, highway "Karaganda–Almata", Kapchagai reservoir vicinity, southern petrophytic slope, 1000 m, 44°23.195′N, 77°71.120′E, 22 Aug 2014, *E.A. Korolyuk 47/277* (NS) [Fig. 1G].

Halerpestes salsuginosa (Pall. ex Georgi) Greene

2*n* = 16, CHN. Kazakhstan Republic, Almatinskaya Oblasť, Alakolskii Raion, NE Balkhash Lake, Otgon Torangy, artificial pond, 623 m, 47°00′25.5″N, 78°32′03.0″E, 9 Jun 2014, *T.V. An'kova 247* (NS).

ROSACEAE

Agrimonia asiatica Juz.

2*n* = 22, CHN. Kazakhstan, Almatinskaya Oblasť, Alakolskii Raion, Dzhungarskii Alatau Ridge, Lepsinsk village vicinity, Chernaya rechka, Zhongar-Alatauskii National Park, Lepsinsk branch, apple forest belt, meadow grass, 1376 m, 45°51.728′N, 80°73.770′E, 27 Aug 2014, *E.A. Korolyuk 63/270* (NS).

TAMARICACEAE

Reaumuria turkestanica Gorschk.

*2*n* = 16, CHN. Kazakhstan, Zhambylskaya Oblasť, Moiynkumskii Raion, Lake Balkhash & Burybajtala village vicinity, 333 m, 44°85.853′N, 74°15.556′E, 30 Aug 2014, *E.A. Korolyuk 74/280* (NS) [Fig. 1H].

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SOLANACEAE

Capsicum eximium Hunz.

2*n* = 2*x* = 24, CHN. Argentina, Salta Province, Capital department, Salta, Valle de Lerma region, 24°46′S, 65°28′W, 26 Jan 2004, *EAM 255* (CORD) [Fig. 2A–D].

Methods

Type, size, amount and distribution of ribosomal loci (rDNA) in metaphase chromosomes were revealed by fluorescent in situ hybridization (FISH) using a *Capsicum* specific 45S rDNA probe (Grabiele, 2010) and according to the protocol of Moscone & al. (1996a). To reveal chromosome morphology, fluorochrome staining with DAPI (4′-6-diamidino-2-phenylindole), subsequent to FISH was performed. The presence of DAPI enhanced regions subsequent to FISH procedure and DAPI counterstaining (FISH DAPI+ bands), that in fact correspond to heterochromatic regions, is described in Moscone & al. (1999). Somatic chromosome preparations and the procedure for measurements of chromosomes and their landmarks to build the corresponding idiogram are described in Moscone & al. (1996b). Twenty metaphase plates were analyzed and ten of them were included for measurements. Satellites were classified according to Battaglia (1955). Karyotype asymmetry was estimated by means of indexes A_1 and A_2 (Romero Zarco, 1986), r > 2 and R (Stebbins, 1971) and i (centromeric mean; Levan & al., 1964). Intercalary markers were mapped using the index di of Greilhuber & Speta (1976). Abbreviations: *m*, metacentric; *sm*, submetacentric; NOR, nucleolar organizer region; cHet, constitutive heterochromatin.

Capsicum eximium is a wild hot chili pepper native to south Bolivia and northwest Argentina, occurring in Jujuy, Salta and Tucuman provinces (Zuloaga & Morrone, 1999; Moscone & al., 2007). The species grows as an herb, shrub or tree (0.6–6 m), with stellate flowers, white with violet lobules, greenish in the tube, and spherical red hot fruits (Moscone & al., 2007). In Bolivia, given its pungent nature (Tewksbury & al., 2006), *C. eximium* is used as a spice (Heiser & Smith, 1958).

This diploid taxon based on *x* = 12 displays median size to large chromosomes, with lengths ranging from 6.95 (*m*) to 4.60 (*sm*) µm, a mean of 5.87 µm and 70.48 µm per haploid genome. The karyotype, 11 *m*+1 *sm*, is unimodal (A_2 = 0.11; R = 1.51) and symmetrical (A_1 = 0.15; r > 2 = 0.00; i = 45.75) and belongs to the category 1A of Stebbins. Pairs nos. 7 (*m*) and 12 (*sm*), display a secondary constriction associated to a terminal macrosatellite at their large and short arms, respectively (Fig. 2A), and are the active NOR pairs.

The cytological characterization of *C. eximium* by means of FISH also revealed an intercalar FISH DAPI+ band at pair no. 2 (Fig. 2A–C, asterisks). This constitutive heterochromatic block was not revealed

in previous fluorescence banding studies of this chili pepper, and is not specifically rich in GC or AT nucleotides (Moscone & al., 2007; Scaldaferro & al., 2013).

The metaphase 45S rDNA FISH pattern of *C. eximium* is consistent with five chromosome pairs that hold ten ribosomal signals of different size at terminal regions (p2, 5, 12; q7, 11) (Fig. 2C). In addition, four of those 45S rDNA FISH signals occurred at the expected active NOR chromosome pairs nos. 7 and 12, respectively (Fig. 2C). Extra 45S rDNA loci at chromosome pairs nos. 2, 5 and 11 are NOR-inactive and were revealed as CMA enhanced (CMA+) highly GC-rich cHet regions in earlier analysis (Moscone & al., 2007; Scaldaferro & al., 2013).

The present FISH approach by means of a *Capsicum* specific 45S rDNA probe in the wild hot chili pepper *C. eximium* permitted to get a detailed cytological map for this taxon. In this sense, each chromosome of the complement can be further recognized via different markers, either morphological and/or related to rDNA and cHet (Fig. 2D). The 45S ribosomal fraction comprises 2.26 µm (3.21%) of the haploid genome of *C. eximium* and the ratio of euchromatin to rDNA in this taxon is 20.87 : 1.

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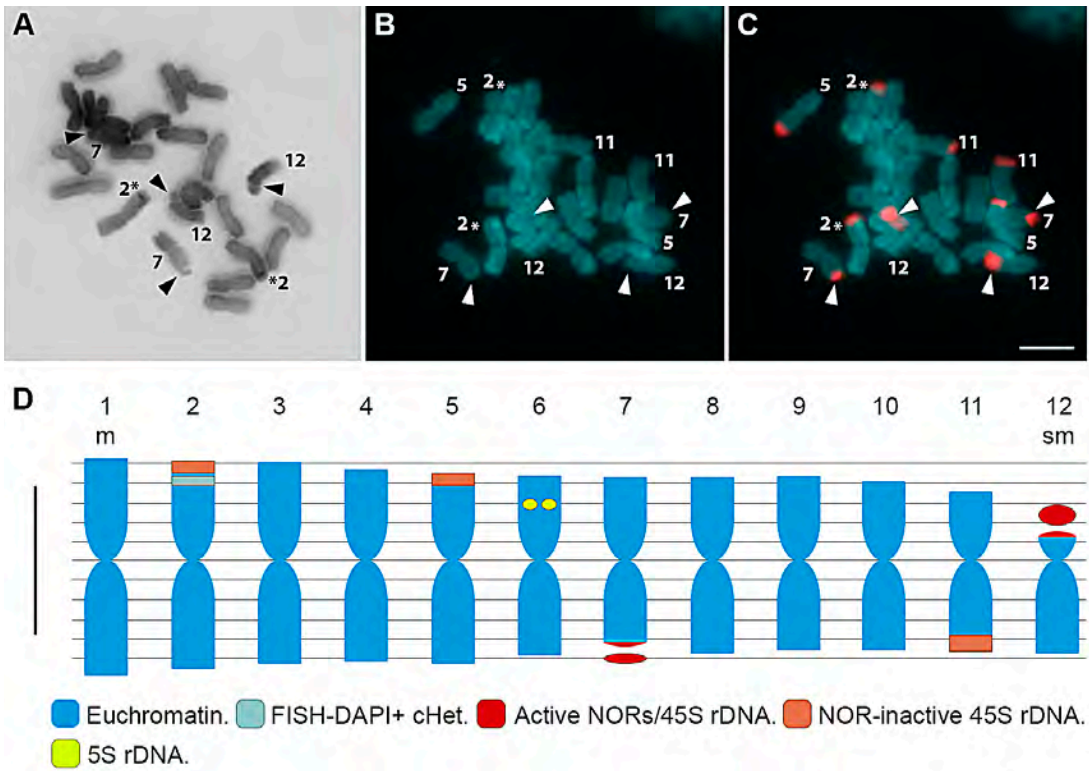

Fig. 2A–D. Cytological characterization of the wild chili pepper *Capsicum eximium* by means of FISH. **A,** DAPI-stained colour-inverted 2*n* = 24 metaphase plate. Terminal macrosatellites of pairs nos. 7 and 12 are pointed out with arrowheads; note the dark grey intercalar cHet block at pair no. 2 (asterisks). **B & C,** The same DAPI stained (blue) 2*n* = 24 metaphase plate, deprived and with 45S rDNA signals (red), respectively. Chromosome pairs with ribosomal loci are numbered and those active NORs are pointed out with arrowheads; also note the light blue intercalar cHet block at pair no. 2 (asterisks) **D,** Idiogram; note that each chromosome of the complement can be identified by morphological and/or rDNA and cHet markers; position of 5S rDNA follows to Aguilera & al. (2016). — Scale bars = 5 µm.

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AMARYLLIDACEAE

Allium microdictyon Prokh.

2*n* = 16, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), subalpine meadow, 1266 m, 51.52623°N, 105.40926°E, 2 Jul 2016, *M. Protopopova & V. Pavlichenko Cl625* (IRKU).

APIACEAE

Angelica decurrens (Ledeb.) B.Fedtsch.

2*n* = 22, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), subalpine meadow, 1266 m, 51.52623°N, 105.40926°E, 3 Jul 2016, *M. Protopopova & V. Pavlichenko Cl629* (IRKU).

Bupleurum aureum Fisch. ex Hoffm.

2*n* = 16, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), subalpine meadow, 1227 m, 51.52845°N, 105.41279°E, 30 Jun 2016, *M. Protopopova & V. Pavlichenko Cl609* (IRKU).

ASTERACEAE

Cirsium helenioides (L.) Hill

2*n* = 34, CHN. Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the upper course of the Levyi Poperechnyi Stream (the tributary of the Babkha River), wet subalpine meadow, 1368 m, 51.44150°N, 104.02360°E, 19 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov Cl602* (IRKU).

Doronicum altaicum Pall.

2*n* = 60, CHN. Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the upper course of the Levyi Poperechnyi Stream (the tributary of the Babkha River), wet subalpine meadow, 1368 m, 51.44150°N, 104.02360°E, 19 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov Cl599* (IRKU).

Saussurea latifolia Ledeb.

2*n* = 26, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), subalpine meadow, 1227 m, 51.52845°N, 105.41279°E, 30 Jun 2016, *M. Protopopova & V. Pavlichenko Cl611* (IRKU).

BRASSICACEAE

Cardamine macrophylla Willd.

2*n* = 64, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, the outskirts of Babushkin town, 2.4 km S of Lake Baikal, the riverside of the Mysovka River, thickets of bird-cherry, 494 m, 51.69587°N, 105.87669°E, 11 Jun 2016, *M. Protopopova & V. Pavlichenko Cl590* (IRKU).

FABACEAE

Lathyrus gmelinii Fritsch

2*n* = 14, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, the lower course of the Bolshaya Ivanovka River, floodplain birch forest, 1 km S of Lake Baikal, 461 m, 51.68154°N, 105.72942°E, 11 Jun 2016, *M. Protopopova & V. Pavlichenko Cl591* (IRKU).

GENTIANACEAE

Swertia baicalensis Popov ex Pissjauk.

2*n* = 26, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km east of Tankhoi settlement), subalpine meadow, 1227 m, 51.52845°N, 105.41279°E, 30 Jun 2016, *M. Protopopova & V. Pavlichenko Cl607* (IRKU); 1324 m, 51.52543°N, 105.40652°E, 2 Jul 2016, *M. Protopopova & V. Pavlichenko Cl623* (IRKU).

GERANIACEAE

Geranium krylovii Tzvelev

2*n* = 28, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, the lower course of the Bolshaya Ivanovka River, floodplain birch forest, 1 km S of Lake Baikal, 461 m, 51.68154° N, 105.72942° E, 11 Jun 2016, *M. Protopopova & V. Pavlichenko C1593* (IRKU).

LAMIACEAE

Lamium album L.

2*n* = 18, CHN. Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the middle course of the Babkha River, near the mouth of the Levyi Poperechnyi Stream, thickets of bird-cherry, 658 m, 51.47939° N, 104.03876° E, 20 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov C1603* (IRKU).

Origanum vulgare L.

2*n* = 30, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), subalpine meadow, 1324 m, 51.52543° N, 105.40652° E, 2 Jul 2016, *M. Protopopova & V. Pavlichenko C1620* (IRKU).

LILIACEAE

Lilium pilosiusculum (Freyn) Miscz.

2*n* = 24, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), subalpine meadow, 1227 m, 51.52845° N, 105.41279° E, 30 Jun 2016, *M. Protopopova & V. Pavlichenko C1608* (IRKU).

MELANTHIACEAE

Veratrum lobelianum Bernh.

2*n* = 32, CHN. Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the upper course of the Levyi Poperechnyi Stream (the tributary of the Babkha River), wet subalpine meadow, 1368 m, 51.44150° N, 104.02360° E, 19 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov C1601* (IRKU).

POLYGONACEAE

Rumex alpestris Jacq.

2*n* = 14, CHN. Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the upper course of the Levyi Poperechnyi Stream (the tributary of the Babkha River), wet subalpine meadow, 1368 m, 51.44150° N, 104.02360° E, 19 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov C1600* (IRKU).

This is the first chromosome count for this species from the area of Siberia.

PRIMULACEAE

Primula pallasii Lehm.

2*n* = 22, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, the lower course of the Bol'shoi Mamai River, 0.8 km S of Lake Baikal, close to the highway M-55, cedar-spruce-fir forest, 487 m, 51.45038° N, 104.78242° E, 12 Jun 2016, *M. Protopopova & V. Pavlichenko C1595* (IRKU); Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the upper course of the Levyi Poperechnyi Stream (the tributary of the Babkha River), wet subalpine meadow, 1368 m, 51.44150° N, 104.02360° E, 19 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov C1596* (IRKU).

RANUNCULACEAE

Aconitum rubicundum Fisch. ex Steud.

2*n* = 16, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), subalpine meadow, 1266 m, 51.52623° N, 105.40926° E, 3 Jul 2016, *M. Protopopova & V. Pavlichenko C1628* (IRKU).

Anemone baicalensis Turcz.

2*n* = 28, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, the outskirts of Tankhoi settlement, 0.6 km S of Lake Baikal, the lower course of the Osinovka River, thickets of the alder and poplar, 463 m, 51.54878° N, 105.09464° E, 11 Jun 2016, *M. Protopopova & V. Pavlichenko C1594* (IRKU); Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the right riverside of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), cedar-fir forest, 902 m, 51.54201° N, 105.40083° E, 4 Jul 2016, *M. Protopopova & V. Pavlichenko C1631* (IRKU); Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the middle course of the Babkha River, near the mouth of the Levyi Poperechnyi Stream, thickets of bird-cherry, 658 m, 51.47939° N, 104.03876° E, 20 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov C1605* (IRKU).

Aquilegia glandulosa Fisch. ex Link

2*n* = 14, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, around Kvadratnoe Lake, the source of the Klyuchi River (catchment area of the Mishiha River), subalpine meadow, 1579 m, 51.51194° N, 105.42611° E, 1 Jul 2016, *M. Protopopova & V. Pavlichenko C1617* (IRKU).

Caltha palustris L.

2*n* = 32, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, around Kvadratnoe Lake, the source of the Klyiuchi River (catchment area of the Mishiha River), subalpine meadow, 1579 m, 51.51194° N, 105.42611° E, 1 Jul 2016, *M. Protopopova & V. Pavlichenko C1618* (IRKU).

Eranthis sibirica DC.

2*n* = 16, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, around Kvadratnoe Lake, the source of the Klyuchi River (catchment area of the Mishiha River), subalpine meadow, 1579 m, 51.51194° N, 105.42611° E, 1 Jul 2016, *M. Protopopova & V. Pavlichenko C1614* (IRKU); Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the upper course of the Levyi Poperechnyi Stream (the tributary of the Babkha River), wet subalpine meadow, 1368 m, 51.44150° N, 104.02360° E, 19 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov C1597* (IRKU).

ROSACEAE

Fragaria orientalis Losinsk.

2*n* = 14, CHN. Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the middle course of the Babkha River, near the mouth of the Levyi Poperechnyi Stream, thickets of bird-cherry, 658 m, 51.47939° N, 104.03876° E, 20 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov C1604* (IRKU).

Geum rivale L.

2*n* = 42, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, the outskirts of Babushkin town, 2.4 km south of

Lake Baikal, the riverside of the Mysovka River, thickets of bird-cherry, 494 m, 51.69587° N, 105.87669° E, 11 Jun 2016, *M. Protopopova & V. Pavlichenko Cl589* (IRKU).

Sibbaldia procumbens L.

2*n* = 14, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, around Kvadratnoe Lake, the source of the Klyuchi River (catchment area of the Mishiha River), subalpine meadow, 1579 m, 51.51194° N, 105.42611° E, 1 Jul 2016, *M. Protopopova & V. Pavlichenko Cl615* (IRKU).

SAXIFRAGACEAE

Bergenia crassifolia (L.) Fritsch

2*n* = 34, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), subalpine meadow, 1227 m, 51.52845° N, 105.41279° E, 30 Jun 2016, *M. Protopopova* & *V. Pavlichenko Cl610* (IRKU); Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the upper course of the Levyi Poperechnyi Stream (the tributary of the Babkha River), wet subalpine meadow, 1368 m, 51.44150° N, 104.02360° E, 19 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov Cl598* (IRKU).

Chrysosplenium sibiricum (Ser.) A.P.Khokhr.

2*n* = 24, CHN. Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the middle course of the Babkha River, near the mouth of the Levyi Poperechnyi Stream, thickets of bird-cherry, 658 m, 51.47939° N, 104.03876° E, 20 Jun 2016, *M. Protopopova, V. Pavlichenko, E. Zolotovskaya & A. Konovalov Cl606* (IRKU).

VIOLACEAE

Viola biflora L.

2*n* = 12, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikal Nature Reserve, the upper course of the Bezymyannyi wellspring (the tributary of the Osinovka River, 20 km E of Tankhoi settlement), subalpine meadow, 1266 m, 51.52623° N, 105.40926° E, 3 Jul 2016, *M. Protopopova & V. Pavlichenko Cl627* (IRKU).

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POACEAE

Alopecurus aequalis Sobol.

2*n* = 14, CHN. Russia, West Siberia, Altaiskii Krai, Altaiskii Raion, the outskirts of VerkhnyayaAya settlement, 345 m, 51.95° N, 85.65138° E, 18 Jul 2015, *E. Punina, A. Gnutikov & A. Rodionov Alt15-380* (LE); Russia, West Siberia, Altaiskii Krai, Kamenskii Raion, between Novoyarki village and Tolstovskii settlement, near the Proslauha River, 53.72888° N, 80.96055° E, 18 Jun 2014, *E. Punina, A. Gnutikov, N. Nosov & A. Rodionov Alt14-158* (LE); Russia, West Siberia, Altaiskii Krai, Krasnoshchekovskii Raion, the road between Chineta settlement and Tulata village, oxbow lake, near the water, 51.55305° N, 83.46388° E, 21 Jul 2016, *E. Punina, A. Gnutikov & N. Nosov Alt16-147* (LE); Russia, West Siberia, Altaiskii Krai, Mamontovskii Raion, pond, near the water, 240 m, 52.56666° N, 81.85° E, 19 Jul 2015, *E. Punina, A. Gnutikov & A. Rodionov Alt15-422* (LE); Russia, West Siberia, Republic of Altai, Kosh-Agachskii Raion, near of the Kindyktykul' Lake, 2485 m, 49.82194° N, 89.47527° E, 18 Aug 2011, *E. Punina, A. Gnutikov, N. Nosov & A. Rodionov Alt11-605* (LE); Russia, West Siberia, Republic of Altai, Kosh-Agachskii Raion, near of the Kindyktykul' Lake, 2470 m, 49.83333° N, 89.46666° E, 13 Jul 2015, *E. Punina, A. Gnutikov & A. Rodionov Alt15-321* (LE); Russia, West Siberia, Republic of Altai, Kosh-Agachskii Raion, the lake-side of the Malye Boguty' Lake, near the water, 2333 m, 49.79472° N, 89.60611° E, 17 Aug 2011, *E. Punina, A. Gnutikov, N. Nosov & A. Rodionov Alt11-160* (LE).

Alopecurus arundinaceus Poir.

2*n* = 28, CHN. Russia, West Siberia, Altaiskii Krai, Topchikhinskii Raion, the outskirts of Chistyun'ka settlement, swampy meadow, 52.67880° N, 83.21047° E, 16 Jul 2016, *E. Punina, A. Gnutikov & A. Rodionov Alt15-96* (LE); Russia, West Siberia, Altaiskii Krai, Ust'-Kalmanskii Raion, near the Novokalmanka settlement, the riverside of the Danilych River (a left tributary of the Kalmanka River), meadow, 52.06611° N, 83.47222° E, 30 May 2016, *E. Punina & A. Shalimov Alt16-56* (LE); Russia, West Siberia, Republic of Altai, Kosh-Agachskii Raion, the riverside of the Tyurgun' River, meadow, 1550 m, 50.48833° N, 88.01805° E, 7 Jul 2015, *E. Punina, A. Gnutikov & A. Rodionov Alt15-165* (LE).

Alopecurus pratensis L.

2*n* = 28, CHN. Russia, West Siberia, Altaiskii Krai, Petropavlovskii Raion, the road between Petropavlovskoe settlement and Solov'ikha settlement, meadow, 52.07555° N, 84.32° E, 30 May 2016, *E. Punina & A. Shalimov Alt16-54* (LE); Russia, West Siberia, Altaiskii Krai, Khabarskii Raion, riverside of the Kur'yeshka River, birch forest, 59.91583° N, 79.99305° E, 22 Jun 2014, *E. Punina, A. Gnutikov, N. Nosov & A. Rodionov Alt14-188* (LE); Russia, West Siberia, Republic of Altai, Kosh-Agachskii Raion, Severo-Chuiskii mountain ridge, the *Cedar* forest, near the road to the Aktru glacier, 50.375° N, 87.87611° E, 21 Aug 2010, *E. Punina, A. Gnutikov & A. Rodionov Alt10-306* (LE); Russia, West Siberia, Republic of Altai, Kosh-Agachskii Raion, Yuzhno-Chuiskii mountain ridge, the road to the Akkol' Lake, mountain tundra, 2420 m, 49.65388° N, 87.93472° E, 24 Aug 2006, *E. Punina, A. Rodionov & M. Rayko Alt476* (LE); Russia, West Siberia, Republic of Altai, Ongudaiskii Raion, south-east of Zaisanskaya Elan' settlement, riverside of the Chernaya River, meadow, 1425 m, 50.98694° N, 85.89222° E, 13 Aug 2011, *E. Punina, A. Gnutikov, N. Nosov & A. Rodionov Alt11-32* (LE); Russia, West Siberia, Republic of Altai, Ust'-Kanskii Raion, the Yabaganskii mountain pass, along roadside, 51.10777° N, 85.37972° E, 23 Jul 2016, *E. Punina, A. Gnutikov & N. Nosov Alt16-410* (LE); Russia, West Siberia, Republic of Altai, Ust'-Kanskii Raion, the Keleiskii mountain pass, along roadside, 51.31694° N, 84.86611° E, 23 Jul 2016, *E. Punina, A. Gnutikov & N. Nosov Alt16-337* (LE).

Alopecurus vlassowii Trin.

2*n* = ca. 120, CHN. Russia, West Siberia, Republic of Altai, Kosh-Agachskii Raion, the left riverside of the Boguty River (2.5 km S of Malye Boguty Lake), subalpine meadow, 2400 m, 49.73333° N, 89.45445° E, 13 Jul 2015, *E. Punina, A. Gnutikov & A. Rodionov Alt15-344* (LE).

Beckmannia syzigachne (Steud.) Fernald

2*n* = 14, CHN. Russia, West Siberia, Altaiskii Krai, Krasnoshchekovskii Raion, the road between Chineta settlement and Tulata village, oxbow lake, near the water, 51.55305° N, 83.46388° E, 21 Jul 2016, *E. Punina, A. Gnutikov & N. Nosov Alt16-138* (LE); Russia, West Siberia, Altaiskii Krai, Soloneshenskii Raion, the outskirts of Topolnoe settlement, riverside of the Anui River, wet meadow, 51.56416° N, 84.68416° E, 22 Jul 2016, *E. Punina, A. Gnutikov & N. Nosov Alt16-382* (LE); Russia, West Siberia, Altaiskii Krai, Soloneshenskii Raion, riverside of the Anui River, on pebbles, 51.56833° N, 84.56583° E, 22 Jul 2016, *E. Punina, A. Gnutikov & N. Nosov Alt16-278* (LE); Russia, West Siberia, Republic of Altai, Kosh-Agachskii Raion, the left riverside of the Yustyt River, wet meadow, 1830 m, 49.91666° N, 88.91666° E, 8 Jul 2015, *E. Punina, A. Gnutikov & A. Rodionov Alt15-251* (LE); Russia, West Siberia, Republic of Altai, Shebalinskii Raion, the riverside of the Kamlak River, near the Kamlak settlement, 480 m, 51.61805° N, 85.66666° E, 4 Jul 2015, *E. Punina, A. Gnutikov & A. Rodionov Alt15-50* (LE).

Phleum phleoides (L.) H.Karst.

2*n* = 14, CHN. Russia, West Siberia, Altaiskii Krai, Krasnoshchekovskii Raion, the road between Kuibyshevo settlement and Ust'-Chagyrka village, stony steppe, 51.57055° N, 83.14388° E, 20 Jul 2016, *E. Punina, A. Gnutikov & N. Nosov Alt16-194* (LE); Russia, West Siberia, Altaiskii Krai, Kur'inskii Raion, the outskirts of Ruch'evo settlement, stony slope, 51.51888° N, 82.4125° E, 19 Jul 2017, *E. Punina, A. Gnutikov & N. Nosov Alt16-187* (LE); Russia, West Siberia, Altaiskii Krai, Pavlovskii Raion, 1 km north-west of Pavlovsk town, meadow, 202 m, 53.40305° N, 83.15833° E, 17 Jun 2014, *E. Punina, A. Gnutikov, N. Nosov & A. Rodionov Alt14-23* (LE); Russia, West Siberia, Altaiskii Krai, Soloneshenskii Raion, near the Berezovka settlement, stony slope, 52.06583° N, 84.13861° E, 22 Jul 2016, *E. Punina, A. Gnutikov & N. Nosov Alt16-260* (LE); Russia, West Siberia, Altaiskii Krai, Ust'-Kalmanskii Raion, near the Novokalmanka settlement, the riverside of the Danilych River (a left tributary of the Kalmanka River), meadow, 52.06611° N, 83.47222° E, 17 Jul 2017, *E. Punina, A. Gnutikov & N. Nosov Alt16-111* (LE).

Phleum pratense L.

2*n* = 42, CHN. Russia, West Siberia, Altaiskii Krai, Ust'-Kalmanskii Raion, near the Novokalmanka settlement, the riverside of the Danilych River (a left tributary of the Kalmanka River), meadow, 52.06611° N, 83.47222° E, 17 Jul 2017, *E. Punina, A. Gnutikov & N. Nosov Alt16-110* (LE); Russia, West Siberia, Republic of Altai, Ongudaiskii Raion, the outskirts of Inegen' village, meadow, 50.49611° N, 86.85083° E, 27 Jun 2016, *E. Punina, A. Gnutikov, N. Nosov & A. Rodionov Alt16-412* (LE); Russia, West Siberia, Republic of Altai, Shebalinskii Raion, the riverside of the Sema River (a left tributary of the Katun' River), close to the highway P-256, meadow, 51.43916° N, 85.69944° E, 2 Sep 2011, *E. Punina, A. Gnutikov, N. Nosov & A. Rodionov Alt11-817* (LE).

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Method of preparation of slides followed Kawakami & al. (2010), except from using aceto-hematoxylin as a stain. Meiotic chromosomes were examined in mother spore cells. Parts of fronds with immature sporangia were fixed in 3 : 1 ethanol-acetic acid, stained in aceto-hematoxylin and squashed in saturated solution of chloral hydrate. Chromosome numbers in literature were checked using CCDB v.1.45 (Rice & al. 2015; http://ccdb.tau.ac.il/).The chromosome number of *Cystopteris altajensis* Gureeva was counted for the first time for this species. Chromosome counts for three species – *Cystopteris fragilis* (L.) Bernh., *Gymnocarpium dryopteris* (L.) Newman and *Rhizomatopteris montana* (Lam.) A.P.Khokhr. – represent first records for the territory of Russia.

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* First chromosome count for the species.
** First chromosome count for specimen from Russia.

CYSTOPTERIDACEAE

**Cystopteris altajensis* Gureeva

n = 126; CHN. Russia, Republic of Khakassia, Shirinskii District, Kuznetsk Alatau (eastern slope), left bank of the Belyi Iyus River, 2 km of the village of Ust-Tunguzhul, the 30th km along the Shira–Berenzhak road, slope with the boulders of granitoids ("Park of Stone Figures"), in the cracks of the boulders under the cornice, 54°12′15″ N, 89°32′15″ E, 26 Jun 2016, *I. Gureeva, D. Ulko, R. Romantes & S. Gureev s.n.* (TK 003629, TK 003630) [Fig. 3A].

***Cystopteris fragilis* (L.) Bernh.

n = 126; CHN. Russia, Republic of Khakassia, Shirinskii District, Kuznetsk Alatau (eastern slope), left bank of the Belyi Iyus River, 1 km of the village of Malaya Siya in the direction of the village of Kommunar, cracks and cornices of steep rocks from limestones, 54°24′11″ N, 89°26′38″ E, 23 Jun 2016, *I. Gureeva, D. Ulko, R. Romantes & S. Gureev s.n.* (TK 003627); Russia, Republic of Khakassia, Shirinskii District, Kuznetsk Alatau (eastern slope), the left bank of the Belyi Iyus River, 1 km of the village of Malaya Siya in the direction of the village of Kommunar, in a moss cushion on a stony slope, 54°24′11″ N, 89°26′38″ E, 23 Jun 2016, *I. Gureeva, D. Ulko, R. Romantes & S. Gureev s.n.* (TK 003625); Russia, Republic of Khakassia, Shirinskii District, Kuznetsk Alatau (eastern slope), left bank of the Belyi Iyus River, 4 km of the village of Malaya Siya, rocks at the path to the cave "Pandora's Box", in the fissures of rocks, 54°25′58″ N, 89°27′26″ E, 25 Jun 2016, *I. Gureeva, D. Ulko, R. Romantes & S. Gureev s.n.* (TK 003628) [Fig. 3D].

***Gymnocarpium dryopteris* (L.) Newman

n = 80; CHN. Russia, Republic of Khakassia, Shirinskii District, Kuznetsk Alatau (easternslope), the left bank of the Belyi Iyus River, 1 km of the village of Malaya Siya in the direction of the village of

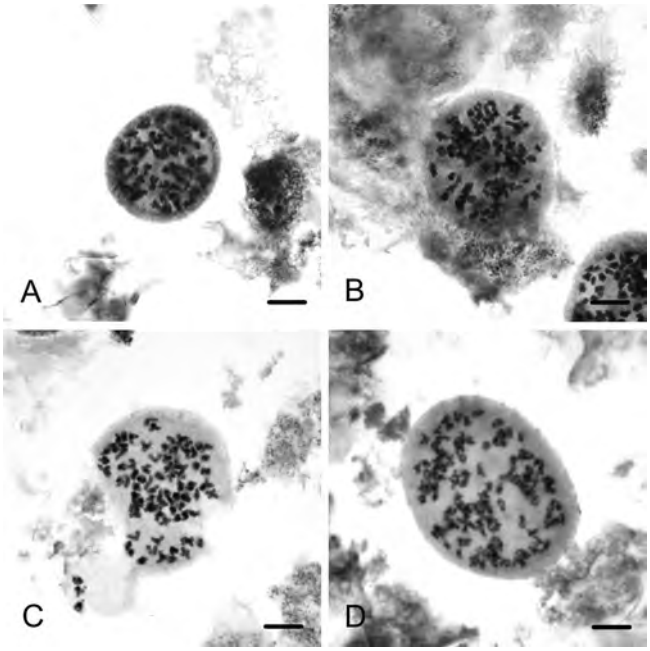

Fig. 3. Meiotic metaphase: **A,** *Cystopteris altajensis* Gureeva, *n* = 126; **B,** *Gymnocarpium dryopteris* (L.) Newman, *n* = 80; **C,** *Rhizomatopteris montana* (Lam.) A.P.Khokhr., *n* = 84; **D,** *Cystopteris fragilis* (L.) Bernh., *n* = 126. — Scale bars, 10 µm.

Kommunar, a battered rocky slope at the foot of rocky outcrops in a birch-larch forest, 54°24′11″N, 89°26′38″E, 23 Jun 2016, *I. Gureeva, D. Ulko, R. Romantes & S. Gureev s.n.* (TK 003633) [Fig. 3B].

***Rhizomatopteris montana* (Lam.) A.P.Khokhr.
(≡ *Cystopteris montana* (Lam.) Bernh. ex Desv.)

n = 84; CHN. Russia, Republic of Khakassia, Shirinskii District, Kuznetsk Alatau (eastern slope), left bank of the Belyi Iyus River, 1 km of the village of Malaya Siya in the direction to the village Kommunar, at the foot of the rocky outcrops in the thickets of *Diplazium sibiricum* (Turcz. ex Kunze) Sa.Kurata, in a birch-larch forest, 54°24′11″N, 89°26′38″'E, 25 Jun 2016, *I. Gureeva, D. Ulko, R. Romantes & S. Gureev s.n.* (TK 003631) [Fig. 3C].

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FCM: DAPI. Fresh leaf tissue or silica gel-dried material was used. The sample preparation and FCM procedure followed that of Hodálová & al. (2010). Internal reference: *Bellis perennis* L., 2C DNA = 3.38 pg (Schönswetter & al., 2007). Fluorescence intensity (against *Bellis perennis* with unit value) for tetraploids varied from 1.22 to 1.39 (mean 1.27) and for octoploids from 2.36 to 2.56 (mean 2.45). CVs of samples and internal standard using fresh leaf tissue were 1.02%–1.76% (mean 1.33%) and 1.17%–2.11% (mean 1.59%), respectively. CVs of samples and internal standard using silica gel-dried material were 1.74%–2.52% (mean 2.14%) and 1.06%–2.68% (mean 2.07%), respectively. Estimation of the ploidy levels ($2n \sim 40$, $2n \sim 80$) is based on the material given in Hodálová & al. (2010: table 1).

Note: Variation in the fluorescence intensity of samples within ploidy levels is not interpreted here as infraspecific variation as it is caused mostly by the use of the silica gel-dried material.

ASTERACEAE

Jacobaea vulgaris Gaertn. subsp. *vulgaris* var. *vulgaris*

$2n \sim 4x \sim 40$, FCM. Belgium, Antwerp Province, Baarle town, near the rest area at the highway, 51°02′01″N, 03°38′29″E, 10 m, 24 Jul 2012, *P. Mereďa*, *Jr. & D.R. Letz 179-1*, *P. Mereďa*, *Jr. & D.R. Letz 179-2*, *P. Mereďa*, *Jr. & D.R. Letz 179-3*, *P. Mereďa*, *Jr. & D.R. Letz 179-4*, *P. Mereďa*, *Jr. & D.R. Letz 179-5*, *P. Mereďa*, *Jr. & D.R. Letz 179-6*, *P. Mereďa*, *Jr. & D.R. Letz 179-7*, *P. Mereďa*, *Jr. & D.R. Letz 179-8*, *P. Mereďa*, *Jr. & D.R. Letz 179-9*, *P. Mereďa*, *Jr. & D.R. Letz 179-10*, *P. Mereďa*, *Jr. & D.R. Letz 179-11*, *P. Mereďa*, *Jr. & D.R. Letz 179-12*, *P. Mereďa*, *Jr. & D.R. Letz 179-13*, *P. Mereďa*, *Jr. & D.R. Letz 179-14*, *P. Mereďa*, *Jr. & D.R. Letz 179-15* (SAV).

$2n \sim 4x \sim 40$, FCM. Croatia, Lika-Senj County, Gornja Ploča village, near the rest area of Zirat the highway, 44°27′39″N, 15°36′12″E, 600 m, 25 Jul 2008, *I. Hodálová & P. Mereďa, Jr. 63-1*, *I. Hodálová & P. Mereďa, Jr. 63-2*, *I. Hodálová & P. Mereďa, Jr. 63-3*, *I. Hodálová & P. Mereďa, Jr. 63-4*, *I. Hodálová & P. Mereďa, Jr. 63-5* (SAV).

$2n \sim 4x \sim 40$, FCM. Czech Republic, Ústí nad Labem Region, Raná village, south slope near the village, 6 Sep 2012, *V. Feráková 217-1* (SAV).

$2n \sim 4x \sim 40$, FCM. Czech Republic, Central Bohemian Region, Žďár village, 50°03′56″N, 13°27′41″E, 564 m, 22 Sep 2011, *J. Kučera & M. Slovák 160-1*, *J. Kučera & M. Slovák 160-2*, *J. Kučera & M. Slovák 160-3*, *J. Kučera & M. Slovák 160-4*, *J. Kučera & M. Slovák 160-5*,

J. Kučera & M. Slovák 160-6, *J. Kučera & M. Slovák 160-7*, *J. Kučera & M. Slovák 160-8*, *J. Kučera & M. Slovák 160-9*, *J. Kučera & M. Slovák 160-10* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Denmark, Mön Island, Borre village, 55°00′31″N, 12°27′09″E, 0 m, 8 Aug 2012, *I. Hodálová & P. Mereďa*, *Jr. 196-1*, *I. Hodálová & P. Mereďa*, *Jr. 196-2*, *I. Hodálová & P. Mereďa*, *Jr. 196-3* (SAV).

2*n* ~ 4*x* ~ 40, FCM. France, Brittany Region, Brest town, 48°23′54″N, 04°26′58″E, 40 m, 23 Jun 2010, *I. Hodálová & V. Feráková 154-1*, *I. Hodálová & V. Feráková 154-2*, *I. Hodálová & V. Feráková 154-3*, *I. Hodálová & V. Feráková 154-4* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Germany, Rhineland-Palatinate, Sinzig town, rest area at the highway, 50°30′53″N, 07°12′15″E, 224 m, 24 Jul 2012, *P. Mereďa*, *Jr. & D.R. Letz 177-1*, *P. Mereďa*, *Jr. & D.R. Letz 177-2*, *P. Mereďa*, *Jr. & D.R. Letz 177-3* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Germany, Schleswig-Holstein, Stein, 54°25′39″N, 10°17′45″E, −2 m, 29 Jul 2012, *P. Mereďa*, *Jr. & D.R. Letz 185-1* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Netherlands, Limburg Province, Heerlen town, near the highway, 50°53′16″N, 05°56′36″E, 90 m, 24 Jul 2012, *P. Mereďa*, *Jr. & D.R. Letz 178-1*, *P. Mereďa*, *Jr. & D.R. Letz 178-2*, *P. Mereďa*, *Jr. & D.R. Letz 178-3* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Poland, West Pomeranian Voivodeship, Nosowo village, 54°06′26″N, 15°59′55″E, 29 m, 23 Sep 2011, *J. Kučera & M. Slovák 161-1*, *J. Kučera & M. Slovák 161-2*, *J. Kučera & M. Slovák 161-3*, *J. Kučera & M. Slovák 161-4*, *J. Kučera & M. Slovák 161-5*, *J. Kučera & M. Slovák 161-6*, *J. Kučera & M. Slovák 161-7*, *J. Kučera & M. Slovák 161-8*, *J. Kučera & M. Slovák 161-9*, *J. Kučera & M. Slovák 161-10* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Romania, Sibiu County, Sibiu-Guşteriţa village, 45°49′12″N, 24°10′53″E, 440–490 m, 29 Jul 2017, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-1*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-2*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-3*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-4*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-5*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-6*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-7*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-8*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-9*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-10*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-11*, *I. Hodálová*, *P. Mereďa*, *Jr. & M. Zaliberová 355-12* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Romania, Sibiu County, Sibiu-Guşteriţa village, 45°48′29″N, 24°12′14″E, 570–580 m, 29 Jul 2017, *P. Mereďa*, *Jr.*, *I. Hodálová & M. Zaliberová 356-1*, *P. Mereďa*, *Jr.*, *I. Hodálová & M. Zaliberová 356-2*, *P. Mereďa*, *Jr.*, *I. Hodálová & M. Zaliberová 356-3*, *P. Mereďa*, *Jr.*, *I. Hodálová & M. Zaliberová 356-4*, *P. Mereďa*, *Jr.*, *I. Hodálová & M. Zaliberová 356-5* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Slovak Republic, Trnavský kraj County, Kúty village, 48°38′37″N, 16°59′54″E, 152 m, 24 Jun 2017, *P. Mereďa*, *Jr. 354-1*, *P. Mereďa*, *Jr. 354-2* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Slovak Republic, Košický kraj County, Lipovník village, Jabloňovské sedlo (Soroška) saddle, 48°37′04″N, 20°37′50″E, 540 m, 16 Aug 2016, *P. Mereďa*, *Jr. 349A-1* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Slovak Republic, Košický kraj County, Seňa village, 48°32′58″N, 21°15′23″E, 220 m, 18 Aug 2017, *P. Mereďa*, *Jr. 363-1* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Slovak Republic, Košický kraj County, Vinné village, 48°47′48″N, 21°58′11″E, 150 m, 16 Jul 2009, *I. Hodálová & P. Mereďa, Jr. 18-4*, *I. Hodálová & P. Mereďa, Jr. 18-5*, *I. Hodálová & P. Mereďa, Jr. 18-6*, *I. Hodálová & P. Mereďa, Jr. 18-7*, *I. Hodálová & P. Mereďa, Jr. 18-8*, *I. Hodálová & P. Mereďa, Jr. 18-9*, *I. Hodálová & P. Mereďa, Jr. 18-10* (SAV).

Note: Occurrence of three tetraploid plants of this taxon was published from the same site already by Hodálová & al. (2007).

2*n* ~ 4*x* ~ 40, FCM. Sweden, Öland Island, Resmo village, 56°32′07″N, 16°28′28″E, 52 m, 6 Aug 2012, *I. Hodálová*, *P. Mereďa*, *Jr. & D.R. Letz 193-1*, *I. Hodálová*, *P. Mereďa*, *Jr. & D.R. Letz 193-2* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Ukraine, Zakarpattia oblasť, Volovets'kyi raion, Verchni Vorota village, 48°45′07″N, 23°08′38″E, 553 m, 8 Jul 2010, *J. Smatanová 152-1*, *J. Smatanová 152-2*, *J. Smatanová 152-3*, *J. Smatanová 152-4*, *J. Smatanová 152-5*, *J. Smatanová 152-6*, *J. Smatanová 152-7* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Ukraine, Zakarpattia oblasť, Volovets'kyi raion, Lazy village, 48°45′26″N, 23°09′21″E, 496 m, 8 Jul 2010, *J. Smatanová 151-1*, *J. Smatanová 151-2*, *J. Smatanová 151-3*, *J. Smatanová 151-4*, *J. Smatanová 151-5*, *J. Smatanová 151-6*, *J. Smatanová 151-7* (SAV).

2*n* ~ 4*x* ~ 40, FCM. Ukraine, Zakarpattia oblasť, Volovets'kyi raion, Volovets' village, 48°43′13″N, 23°12′47″E, 526 m, 12 Jul 2010, *J. Smatanová 153-1*, *J. Smatanová 153-2*, *J. Smatanová 153-3*, *J. Smatanová 153-4*, *J. Smatanová 153-5*, *J. Smatanová 153-6*, *J. Smatanová 153-7* (SAV).

Jacobaea vulgaris subsp. *pannonica* Hodálová & Mereďa

2*n* ~ 8*x* ~ 80, FCM. Czech Republic, Vysočina Region, Rouchovany village, shooting-gallery near the settlement of Nové Dvory, 49°04′43″N, 16°04′59″E, 361 m, 8 Jul 2008, *A. Vinikarová 117-1*, *A. Vinikarová 117-2*, *A. Vinikarová 117-3*, *A. Vinikarová 117-4*, *A. Vinikarová 117-5* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Czech Republic, South Moravian Region, Rešice village, hill side north of the settlement of Kordula, 49°04′04″N, 16°08′53″E, 325 m, 8 Jul 2008, *A. Vinikarová 116-1*, *A. Vinikarová 116-2*, *A. Vinikarová 116-3*, *A. Vinikarová 116-4* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Hungary, Nógrád County, Bárna village, 48°06′44″N, 19°56′13″E, 370 m, 10 Jul 2013, *P. Mereďa*, *Jr. 230-1* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Hungary, Borsod-Abaúj-Zemplén County, Domaháza village, 48°11′40″N, 20°06′38″E, 240–260 m, 11 Jul 2013, *P. Mereďa*, *Jr. 232-1*, *P. Mereďa*, *Jr. 232-2*, *P. Mereďa*, *Jr. 232-3*, *P. Mereďa*, *Jr. 232-4*, *P. Mereďa*, *Jr. 232-5*, *P. Mereďa*, *Jr. 232-6* (SAV).

Note: Only one locality (Keszeg, cf. Hodálová & al., 2007) of this taxon was known up to now from the North Hungarian Mts.

Here reported occurrences from Bárna village and Domaháza village represent the second and the third ones from this part of Hungary.

2*n* ~ 8*x* ~ 80, FCM. Romania, Arad County, Agrişu Mare village, 46°16′26″N, 21°44′37″E, ca 190 m, 31 Jul 2017, *P. Mereďa*, *Jr.*, *I. Hodálová & M. Zaliberová 357-1*, *P. Mereďa*, *Jr.*, *I. Hodálová & M. Zaliberová 357-2*, *P. Mereďa*, *Jr.*, *I. Hodálová & M. Zaliberová 357-3* (SAV).

Note: It is the first record of the taxon occurrence in Romania (cf. Hodálová & al., 2015, Mereďa & al., 2016b).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Bratislavský kraj County, Bratislava-Devín, locality "Merice", 48°10′41″N, 16°59′11″E, 205–240 m, 11 Jul 2016, *P. Mereďa*, *Jr. 342-1*, *P. Mereďa*, *Jr. 342-2*, *P. Mereďa*, *Jr. 342-3*, *P. Mereďa*, *Jr. 342-4*, *P. Mereďa*, *Jr. 342-5*, *P. Mereďa*, *Jr. 342-6* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Nitriansky kraj County, Nitra town, Meškov vrch hill, 48°21′08″N, 18°05′43″E, 420–430 m, 8 Aug 2017, *P. Mereďa*, *Jr. 358-1*, *P. Mereďa*, *Jr. 358-2*, *P. Mereďa*, *Jr. 358-3* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Nitriansky kraj County, Nitra town, Nature Reserve Zoborská lesostep, 48°21′03″N, 18°05′53″E, 430–440 m, 8 Aug 2017, *P. Mereďa*, *Jr. 359-1*, *P. Mereďa*, *Jr. 359-2*, *P. Mereďa*, *Jr. 359-3*, *P. Mereďa*, *Jr. 359-4* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Nitriansky kraj County, Nitra town, Zobor hill, locality "Tri duby", 48°20′57″N, 18°06′02″E, 440–450 m, 8 Aug 2017, *P. Mereďa*, *Jr. 360-1*, *P. Mereďa*, *Jr. 360-2* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Nitriansky kraj County, Nitra town, Zobor hill, locality "Lyžiarska lúka", 48°20′56″N, 18°06′11″E, 470–500 m, 8 Aug 2017, *P. Mereďa*, *Jr. 361-1*, *P. Mereďa*, *Jr. 361-2* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Nitriansky kraj County, Nitra town, Zobor hill, at the top, 48°20′47″N, 18°06′32″E, 560–585 m, 8 Aug 2017, *P. Mereďa*, *Jr. 362-1*, *P. Mereďa*, *Jr. 362-2*, *P. Mereďa*, *Jr. 362-3*, *P. Mereďa*, *Jr. 362-4*, *P. Mereďa*, *Jr. 362-5* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Banskobystrický kraj County, Jelšavská Teplica village, Muteň hill, 48°35′33″N, 20°16′14″E, 430 m, 16 Aug 2016, *P. Mereďa*, *Jr. 347-1* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Košický kraj County, Lipovník village, Jabloňovské sedlo (Soroška) saddle, 48°37′04″N, 20°37′50″E, 550 m, 16 Aug 2016, *P. Mereďa*, *Jr. 349B-1*, *P. Mereďa*, *Jr. 349B-2*, *P. Mereďa*, *Jr. 349B-3* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Košický kraj County, Jablonov nad Turňou village, 48°36′00″N, 20°39′33″E, 360 m, 16 Aug 2016, *P. Mereďa*, *Jr. 348-1* (SAV).

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Košický kraj County, Slavec village, 48°35′38″N, 20°27′44″E, ca 615 m, 18 Aug 2017, *P. Mereďa*, *Jr. 364-1* (SAV).

Note: Together with the locality nr. 85 (Hôrka-Primovce, 600–650 m a. s. l., cf. Mereďa & al., 2016a, b) it is the highest occurrence of the taxon.

2*n* ~ 8*x* ~ 80, FCM. Slovak Republic, Košický kraj County, Háj village, 48°37′55″N, 20°51′59″E, 550 m, 17 Aug 2016, *P. Mereďa*, *Jr. 351-1*, *P. Mereďa*, *Jr. 351-2* (SAV).

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* First chromosome count for the species.
** New cytotype for the species.
▼ First chromosome report for an Indian accession

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POACEAE

***Aristida mutabilis* Trin. & Rupr.

n = 22, CHN. India, Rajasthan, Pali, 25.7710° N, 73.3234° E, 218 m, along the roads, 2 Sep 2015, *N. Kaur 33815* (PUN 60790) [Fig. 4A].

Previously, this species is known to have diploid chromosome number of *n* = 11 (Sahni & Bir, 1985) from Punjab. From outside of India, 2*n* = 22 (Bourreil & Geslot, 1971) was reported from Africa.

**Aristida redacta* Stapf (= *Stipa aristoides* Stapf ex Lisboa)

n = 18, CHN. India, Rajsthan, Jhalawar, 24.5973° N, 76.1609° E, 317 m, dry sandy place along road, 22 Aug 2014, *N. Kaur 31906* (PUN 60139) [Fig. 4B].

***Arthraxon lanceolatus* (Roxb.) Hochst.

n = 14, CHN. India, Rajasthan, Udaipur, Monsoon palace, 24.5854° N, 73.7124° E, 557 m, along the forests, 13 Sep 2015, *N. Kaur 31944* (PUN 60176); India, Rajasthan, Mount Abu, along the sides of Naki lake, 24.5925° N, 72.7156° E, 1220 m, 12 Nov 2013, *N. Kaur 31970* (PUN 60202) [Fig. 4C].

Previously, this species is known to have *n* = 15 (Sharma & Sharma, 1979) from India.

***Arthraxon lancifolius* (Trin.) Hochst.

n = 14, CHN. India, Rajasthan, Mount Abu, Naki lake, along the road surrounding the lake, 24.5925° N, 72.7156° E, 1220 m, 12 Nov 2013, *N. Kaur 31964* (PUN 60196) [Fig. 4D].

Previously, chromosome numbers *n* = 9, 18 (Mehra, 1982) and *n* = 9 (Sahni & Bir, 1985) were reported for this species from India, whereas, *n* = 9 (Ahsan & al., 1994) was reported from outside of India.

***Brachiaria distachya* (L.) Stapf

n = 9, CHN. India, Rajasthan, Mount Abu, near Dilwara Temple, 24.6093° N, 72.7229° E, 1200 m, 14 Nov 2013, *N. Kaur 31984* (PUN 60216) [Fig. 4G].

Previously, this species is known to have chromosome numbers of *n* = 10 (Bir & Sahni, 1983), *n* = 18 (Basappa & al., 1987), 2*n* = 36 (Sharma & Kaur, 1980; Kaur & Gupta, 2016), 2*n* = 72 (Mehra & Sharma, 1975) from India. From outside of India, 2*n* = 36 (Gould & Soderstrom, 1974) and 2*n* = 72 (Tateoka, 1965) were reported.

**Brachiaria lata* var. *pubescens* C.E.Hubb.

n = 16, CHN. India, Rajasthan, Udaipur, 24.5854° N, 73.7124° E, 557 m, Gulab Bagh, Udaipur, 26 Aug 2014, *N. Kaur 31926* (PUN 60158); India, Rajasthan, Udaipur, Monsoon Palace, 24.6093° N, 72.7229° E, 850 m, 13 Sep 2015, *N. Kaur 31983* (PUN 60215) [Fig. 4E].

**Brachiaria ramosa* var. *pubescens* Basappa & Muniy.

n = 24, CHN. India, Rajasthan, Pali, on the way to Bakri, Pali, 25.7713° N, 73.3229° E, 218 m, 30 Aug 2014, *N. Kaur 31937* (PUN 60169); India, Rajasthan, Jhalawar, Herbal garden, 24.5973° N, 76.1609° E, 312 m, 26 Aug 2014, *N. Kaur 31981* (PUN 60213) [Fig. 4F].

**Dichanthium pertusum* (L.) Clayton

n = 40, CHN. India, Rajasthan, Udaipur, Monsoon Palace, 24.5854° N, 73.7124° E, 850 m, along the forest, 27 Aug 2014, *N. Kaur 31933* (PUN 60165) [Fig. 4H].

**Dignathia hirtella* Stapf

n = 10, CHN. India, Rajasthan, Udaipur, Monsoon palace, 24.5854° N, 73.7124° E, 850 m, along the forest, 13 Sep 2015, *N. Kaur 31931* (PUN 60163) [Fig. 4I].

***Diplachne fusca* (L.) P.Beauv. ex Roem. & Schult.

n = 10, CHN. India, Rajasthan, Udaipur, Gulab Bagh, 24.5854° N, 73.7124° E, 600 m, waste places in the park, 26 Aug 2014, *N. Kaur 31915* (PUN 60147) [Fig. 4J].

The present report confirms the previous report of *n* = 10 (Spies & al., 1991) from outside of India. Besides, other chromosome numbers from outside of India with *n* = 19 (Spies & Voges, 1988) and *n* = 20 (Moinuddin & al., 1994) were reported. From India, only *n* = 20 (Bir & Sahni, 1986) was reported.

▼*Echinochloa colona* (L.) Link

n = 9, CHN. India, Rajasthan, Jhalawar, near D.C. Kothi, 24.5973° N, 76.1609° E, 312 m, 13 Aug 2013, *N. Kaur 31961* (PUN 60193) [Fig. 4K].

This report agrees with the previously published report of *n* = 9 (Ahsan & al., 1994) from outside of India. From outside of India, also *n* = 18, 27 (Ahsan & al., 1994), 2*n* = 36 (Rao & Mwasumbi, 1981) and 2*n* = 54 (Pohl & Davidse, 1971) were reported. From India, *n* = 27 (Kaur & al., 2011), 2*n* = 30 (Mehra, 1982), 2*n* = 48 (Malik & Tripathi, 1974) were reported.

▼*Echinochloa crus-pavonis* (Kunth) Schult.

n = 9, CHN. India, Rajasthan, Abu road, 24.4640° N, 72.7717° E, 267 m, along the tracks of railway station, 14 Dec 2014, *N. Kaur 33856* (PUN 60957) [Fig. 4L].

Present chromosome report agrees with the previously published reports of *n* = 9 (Olorode, 1975) from outside of India. Other chromosome reports from outside of India are 2*n* = 36 (Feng & Zhang, 1993; Pohl & Davidse, 1971); 2*n* = 54 (Xu & al., 1992). From India, 2*n* = 54 (Kaur & al., 2013) is known.

***Eriochloa procera* (Retz.) C.E.Hubb.

n = 27, CHN. India, Rajasthan, Udaipur, Gulab Bagh, 24.5854° N, 73.7124° E, 557 m, waste places in the park, 26 Aug 2014, *N. Kaur 33869* (PUN 60956) [Fig. 4M].

Previously, the species is known to have chromosome numbers of *n* = 18 (Mehra, 1982) from India and *n* = 9, 18 from outside of India (Ahsan & al., 1994).

▼*Panicum turgidum* Forssk.

n = 18, CHN. India, Rajasthan, Bikaner, near Gaushala, Deshnok, 27.7930° N, 73.3378° E, 278 m, 9 Aug 2016, *N. Kaur 33809* (PUN 60786) [Fig. 4O].

This report is in conformity with the previous report of 2*n* = 36 (Haroun, 2000) from outside of India. Besides, *n* = 9 (Ahsan & al., 1994) and *n* = 27 (Ferchichi & al., 1994) were also reported from outside of India.

***Paspalidium punctatum* (Burm.) A.Camus

n = 9, CHN. India, Rajasthan, Jhalawar, Kali Sind Dam, 24.5973° N, 76.1609° E, 312 m, 21 Aug 2014, *N. Kaur 33817* (PUN 60792) [Fig. 4N].

Previously, the species was reported to have chromosome numbers of *n* = 18 (Mehra, 1982) and 2*n* = 54 (Christopher & Abraham, 1976) from India. From outside of India, 2*n* = 36 (Gould & Soderstrom, 1974) was reported.

***Rhynchelytrum repens* (Willd.) C.E.Hubb.

n = 27, CHN. India, Rajasthan, Udaipur, 24.5854° N, 73.7124° E, 850 m, along the road side, 13 Sep 2015, *N. Kaur 31908* (PUN 60140) [Fig. 4P].

Previously, the species is known to have chromosome number of *n* = 18 (Gill & al., 1980) from India. From outside of India, *n* = 18 (Dujardin 1979) and 2*n* = 36 (Nordenstam, 1982) were reported.

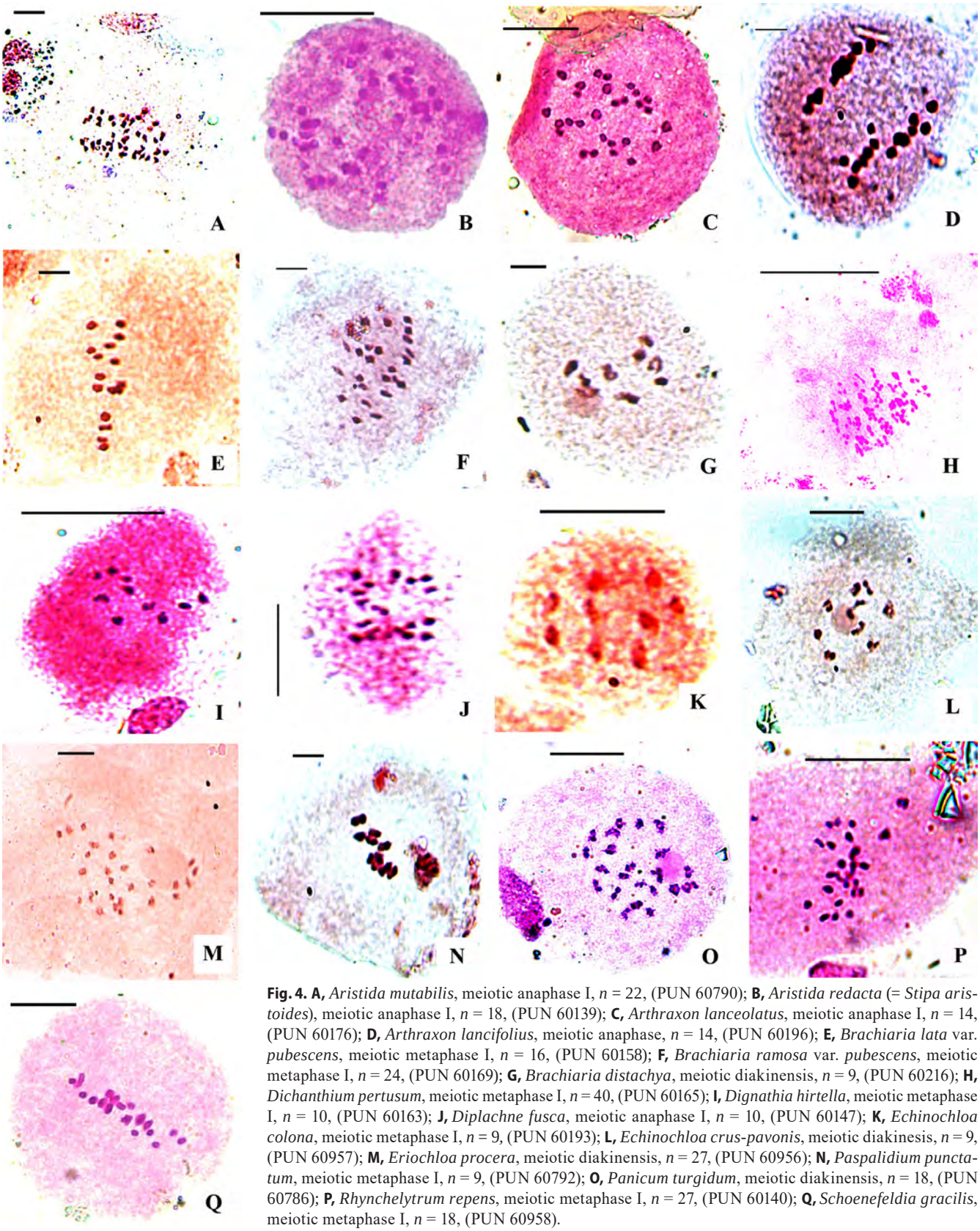

Fig. 4. A, *Aristida mutabilis*, meiotic anaphase I, *n* = 22, (PUN 60790); **B,** *Aristida redacta* (= *Stipa aristoides*), meiotic anaphase I, *n* = 18, (PUN 60139); **C,** *Arthraxon lanceolatus*, meiotic anaphase I, *n* = 14, (PUN 60176); **D,** *Arthraxon lancifolius*, meiotic anaphase, *n* = 14, (PUN 60196); **E,** *Brachiaria lata* var. *pubescens*, meiotic metaphase I, *n* = 16, (PUN 60158); **F,** *Brachiaria ramosa* var. *pubescens*, meiotic metaphase I, *n* = 24, (PUN 60169); **G,** *Brachiaria distachya*, meiotic diakinensis, *n* = 9, (PUN 60216); **H,** *Dichanthium pertusum*, meiotic metaphase I, *n* = 40, (PUN 60165); **I,** *Dignathia hirtella*, meiotic metaphase I, *n* = 10, (PUN 60163); **J,** *Diplachne fusca*, meiotic anaphase I, *n* = 10, (PUN 60147); **K,** *Echinochloa colona*, meiotic metaphase I, *n* = 9, (PUN 60193); **L,** *Echinochloa crus-pavonis*, meiotic diakinesis, *n* = 9, (PUN 60957); **M,** *Eriochloa procera*, meiotic diakinensis, *n* = 27, (PUN 60956); **N,** *Paspalidium punctatum*, meiotic metaphase I, *n* = 9, (PUN 60792); **O,** *Panicum turgidum*, meiotic diakinensis, *n* = 18, (PUN 60786); **P,** *Rhynchelytrum repens*, meiotic metaphase I, *n* = 27, (PUN 60140); **Q,** *Schoenefeldia gracilis*, meiotic metaphase I, *n* = 18, (PUN 60958).

**Schoenefeldia gracilis* Kunth

n = 18, CHN. India, Rajasthan, Mount Abu, near Bikaner Hotel, 24.5925° N, 72.7229° E, 1220 m, 1 Sep 2016, *N. Kaur 3387I* (PUN 60958) [Fig. 4Q].

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* First chromosome count for the species.

** New cytotype for the species.

ASTERACEAE (COMPOSITAE)

Achillea asiatica Serg.

2*n* = 18, CHN. Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″ N, 102°14′59″ E, grass-forbs meadow at larch forest edge, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-48* (LE).

Artemisia adamsii Besser

2*n* = 18, CHN. Mongolia, Bayankhongor Aimak, Ulziit Somon, Gurvan-Obony-Dureldzh pass, slope of Mt. Modotan-Servel, 2192 m,

45°58′32″N, 101°07′50″E, stony tail, motley herb meadow, at rodent burrows, 30 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-1* (LE).

Artemisia altaiensis Krasch.

2*n* = 54, CHN. Mongolia, Bayankhongor Aimak, Ulziit Somon, Gurvan-Obony-Dureldzh pass, Mt. Modotan-Serven, 2192 m, 45°58′32″N, 101°07′50″E, sheer cliffs, 30 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-10* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-11* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-14* (LE).

Artemisia argyrophylla Ledeb.

**2*n* = 18, CHN. Mongolia, Bayankhongor Aimak, Bayangov' Somon, northern slope of the Ikh-Bogdyn-Nuru Mts., upper part of Ikh-Pitug gorge, 3248 m, 44°56′23″N, 100°22′32″E, gravelly slope, 27 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-8* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-9* (LE).

Artemisia changaica Krasch.

**2*n* = 18, CHN. Mongolia, Bayankhongor Aimak, Ulziit Somon, Gurvan-Obony-Dureldzh pass, foot of Mt. Modotan-Servel, 2192 m, 45°58′32″N, 101°07′50″E, grass-forbs steppe, 30 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-46* (LE).

Artemisia commutata Besser

2*n* = 18, CHN. Mongolia, Khentii Aimak, valley Onon River, near of mouth Shusyn-gol River, southern stony slope of hill, mountain sagebrush-motley herb steppe, 20 Jul 2011, *A.A. Korobkov 2012-32* (LE); Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″N, 102°14′59″E, grass-forbs meadow on edge of larch forest, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-30* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-32* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-33* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-119* (LE).

Artemisia depauperata Krasch.

2*n* = 36, CHN. Mongolia, Gov'-Altai Aimak, Esenbulag Somon, Khan-Taymiriin-Nuru Mts., Mt. Zaivar, Ostanua slope, 2573 m, 46°14′22″N, 96°21′28″E, mountain stony steppe, 23 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-34* (LE); Mongolia, Bayankhongor Aimak, Bayangov' Somon, northern slope of the Ikh-Bogdyn-Nuru Mts., Ikh-Pitug gorge, 3248 m, 44°56′23″N, 100°22′32″E, mountain stony steppe, 27 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-35* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-36* (LE); Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″N, 102°14′59″E, stony steppe on top of hill, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-31* (LE).

**Artemisia disjuncta* Krasch.

2*n* = 18, CHN. Mongolia, Bayankhongor Aimak, Bayangov' Somon, northern slope of the Ikh-Bogdyn-Nuru Mts., middle part of Ikh-Pitug gorge, 3248 m, 44°56′23″N, 100°22′32″E, in rock crevices, 27 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-3* (LE, UBA).

Artemisia dolosa Krasch.

2*n* = 36, CHN. Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″N, 102°14′59″E, grass-forbs meadow on edge of larch forest, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-29* (LE).

Artemisia dracunculus L.

2*n* = 36, CHN. Mongolia, Gov'-Altai Aimak, Chandman' Somon, headwater of Khurkhre-Gol, SW slope of valley, 1995 m, 45°29′22″N, 97°37′41″E, on fine soil below rocks, 25 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-45* (LE); Mongolia, Bayankhongor Aimak, Bayangov' Somon, southern slope of the Ikh-Bogdyn-Nuru Mts., 44°56′23″N, 100°22′32″E, steep rocky slope, gravelly dumps at rodent burrows, 26 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-42* (LE); Mongolia, Bayankhongor Aimak, Ulziit Somon, Gurvan-Obony-Dureldzh pass, foot of Mt. Modotan-Servel, 2192 m, 45°58′32″N, 101°07′50″E, grass-motley herb steppe, 30 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-41* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-43* (LE); Mongolia, Bulgan Aimak, Gurvanbulag Somon, Rashaant granite mountain massif, 47°22′19″N, 103°40′53″E, 3 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-44* (LE).

Artemisia frigida Willd.

2*n* = 18, CHN. Mongolia, Bulgan Aimak, Gurvanbulag Somon, Rashaant granite mountain massif, 47°22′19″N, 103°40′53″E, gravelly terrace in valley of creek, 3 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-12* (LE).

2*n* = 36, CHN. Mongolia, Bayankhongor Aimak, Bayan-Ovoo Somon, Mt. Khaldzan Harhai, eastern slope, 1802 m, 45°58′44″N, 100°16′57″E, 21 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-13* (LE); Mongolia, Gov'-Altai Aimak, Chandman' Somon, headwater of the Khurkhre-Gol River, 1995 m, 45°29′22″N, 97°37′41″E, gravelly terrace, 25 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-18* (LE); Mongolia, Bayankhongor Aimak, Bayangov' Somon, southern slope of the Ikh-Bogdyn-Nuru Mts., 44°56′23″N, 100°22′32″E, on stony ledges, 26 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-19* (LE); Mongolia, Bayankhongor Aimak, Ulziit Somon, Gurvan-Obony-Dureldzh pass, slope of Mt. Modotan-Servel, 2192 m, 45°58′32″N, 101°07′50″E, on rubble, 30 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-15* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-16* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-17* (LE).

Artemisia integrifolia L.

2*n* = 36, CHN. Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″N, 102°14′59″E, grass-forbs meadow on edge of larch forest, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-20* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-21* (LE).

Artemisia leucophylla Turcz. ex C.B.Clarke

2*n* = 16, CHN. Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″N, 102°14′59″E, slope to valley of creek, on gravel, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-23* (LE).

Artemisia macilenta (Maxim.) Krasch.

2*n* = 36, CHN. Mongolia, Khentii Aimak, 5 km south of Ul'hun outpost, slope of ridge, burnt pine forest, 18 Jul 2011, *A.A. Korobkov 2012-30* (LE).

Artemisia macrocephala Jacquem. ex Besser

2*n* = 18, CHN. Mongolia, Bayankhongor Aimak, Ulziit Somon, Gurvan-Obony-Dureldzh pass, slope of Mt. Modotan-Servel, 2192 m, 45°58′32″N, 101°07′50″E, on rubble, at rodent burrows, 30 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-7* (LE).

Artemisia mongolica Fisch. ex Besser

2*n* = 16, CHN. Mongolia, Gov'-Altai Aimak, territory of Altai town, on lawn 22 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-26* (LE); Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″N, 102°14′59″E, slope to valley of creek, on gravel, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-25* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-27* (LE); Mongolia, Bulgan Aimak, Gurvanbulag Somon, Rashaant granite mountain massif, 47°22′19″N, 103°40′53″E, floodplain pebble of creek, 3 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-22* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-24* (LE).

Artemisia monostachya Bunge ex Maxim.

2*n* = 36, CHN. Mongolia, Khentii Aimak, valley Onon River, near mouth of Shusyn-gol River, southern stony slope of hill, mountain sagebrush-motley herb steppe, 20 Jul 2011, *A.A. Korobkov 2012-31* (LE).

Artemisia palustris L.

2*n* = 18, CHN. Mongolia, Bayankhongor Aimak, Ulziit Somon, Gurvan-Obony-Dureldzh pass, Mt. Modotan-Servel, 2192 m, 45°58′32″N, 101°07′50″E, mountain stony steppe, 30 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-2* (LE).

Artemisia phaeolepis Krasch.

2*n* = 36, CHN. Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″N, 102°14′59″E, larch forest on hillside, motley herb meadow, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-5* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-6* (LE); Mongolia, Bulgan Aimak, Gurvanbulag Somon, Rashaant granite mountain massif, 47°22′19″N, 103°40′53″E, stony slope, grassy shrubs, 3 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-4* (LE).

Artemisia pycnorhiza Ledeb.

2*n* = 36, CHN. Mongolia, Bayankhongor Aimak, Ulziit Somon, Gurvan-Obony-Dureldzh pass, slope of Mt. Modotan-Servel, 2192 m, 45°58′32″N, 101°07′50″E, mountain grass-motley herb stony steppe, 30 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-28* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-39* (LE), *V.I. Dorofeev, A.A. Korobkov & al. 2016-40* (LE).

Artemisia scoparia Waldst. & Kit.

2*n* = 16, CHN. Mongolia, Bulgan Aimak, Gurvanbulag Somon, Rashaant granite mountain massif, 47°22′19″N, 103°40′53″E, valley of creek, gravelly terrace, 3 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-38* (LE).

2*n* = 18, CHN. Mongolia, Bulgan Aimak, Gurvanbulag Somon, Rashaant granite mountain massif, 47°22′19″N, 103°40′53″E, lower part of slope, grass-motley herb steppe, 3 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-37* (LE).

Artemisia xylorrhiza Krasch. ex Filatova

2*n* = 36, CHN. Mongolia, Gov'-Altai Aimak, Chandman' Somon, headwater of the Khurkhre-Gol River, wide valley, 1995 m, 45°29′22″N, 97°37′41″E, gravelly terrace, 25 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-47* (LE).

Dendranthema zawadskii (Herbich) Tzvelev

2*n* = 54, 72, CHN. Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″N, 102°14′59″E, grass-forbs meadow on edge of larch forest, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-49* (LE).

Neopallasia pectinata (Pall.) Poljakov

2*n* = 18, CHN. Mongolia, Gov'-Altai Aimak, Chandman' Somon, headwater of the Khurkhre-Gol River, wide valley, 1995 m, 45°29′22″N, 97°37′41″E, gravelly terrace, 25 Aug 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-51* (LE).

Tanacetum boreale Fisch. & DC.

2*n* = 18, CHN. Mongolia, Uverkhangai Aimak, Uyanga Somon, 2227 m, 46°37′00″N, 102°14′59″E, grass-forbs meadow on edge of larch forest, 1 Sep 2015, *V.I. Dorofeev, A.A. Korobkov & al. 2016-50* (LE).

POACEAE (GRAMINEAE)

Colpodium versicolor (Steven) Schmalh.

2*n* = 4, CHN. Russia, Republic of Dagestan, Dokuzparinskii Raion, Mt. Shalbuzdag, 3800 m, 30 Aug 2014, *V.V. Kotseruba 44932* (IRK).

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* First chromosome count for the species.
** New cytotype for the species.

ASTERACEAE (COMPOSITAE)

Bidens pilosa L.

2*n* = 72, CHN. China, Province Henan, Luoyang city, Jianxi District, vicinity of Magnolia City Hotel (Nanchang Road 160), ruderalized groupings, 34°38′33.71″N, 112°24′27.49″E, 10 Dec 2014, *D.A. Krivenko 37534* (IRK).

Conyza bonariensis (L.) Cronquist

2*n* = 54, CHN. Italy, Region Campania, Province of Naples, Pompeii city, in cracks stony slabs, 40°45′00″N, 14°30′00″E, 29 May 2016, *Yu.K. Vinogradova 45307* (IRK); Italy, Region Campania, Province of Naples, Herculaneum city, in cracks of pavement, 40°48′22″N, 14°20′50″E, 3 Jun 2016, *Yu.K. Vinogradova 45311* (IRK).

Conyza canadensis (L.) Cronquist

2*n* = 18, CHN. Russia, Moscow city, territory of N.V. Tsitsin Main Botanical Garden of the Russian Academy of Sciences, 55°50′39.09″N, 37°35′22.46″E, Sep 2016, *Yu.K. Vinogradova 45312* (IRK).

**Conyza* ×*rouyana* Sennen (= *C. canadensis* (L.) Cronquist × *C. sumatrensis* (Retz.) E.Walker)

2*n* = 54, CHN. Italy, Rome city, at fence of Vesta Temple, 41°53′34″N, 12°29′04″E, 28 May 2016, *Yu.K. Vinogradova 45310* (IRK); Italy, Region Campania, Province of Naples, Pompeii city, in cracks stony slabs, 40°45′00″N, 14°30′00″E, 29 May 2016, *Yu.K. Vinogradova* 45308 (IRK).

Conyza sumatrensis (Retz.) E.Walker

2*n* = 54, CHN. Italy, Rome city, dividing strip of Via Flaminia str., lawn, 41°17′20″N, 12°47′37″E, 2 Apr 2016, *Yu.K. Vinogradova 45306* (IRK); Italy, Region Campania, Province of Naples, Pompeii city, in cracks stony slabs, 40°45′00″N, 14°30′00″E, 29 May 2016, *Yu.K. Vinogradova 45309* (IRK).

BORAGINACEAE

Craniospermum subvillosum Lehm.

2*n* = 24, CHN. Russia, Irkutskaya Oblast', Ol'khonskii Raion, Olkhon Island on Baikal Lake, Sarayskii Cove, vicinity of Khuzhir village, coastal sands, 53°12′18″N, 107°21′40″E, 12 Aug 2009, *A.V. Verkhozina & al. 15852* (IRK).

EPHEDRACEAE

Ephedra procera C.A.Mey.

2*n* = 14, CHN. Russia, Republic of Dagestan, Buinakskii Raion, near of Agachaul village, Talginskoye gorge, southern gravelly slope, 350 m, 42°54′17.61″N, 47°28′13.98″E, 6 Sep 2012, *A.R. Gabibova 43554* (IRK).

FABACEAE (LEGUMINOSAE)

Astragalus cicer L.

2*n* = 64, CHN. Russia, Novosibirskaya Oblast', suburb of Novosibirsk city (Akademgorodok), vicinity of Novyi village, roadside, 159 m, 54°48′51.7″N, 83°05′59.4″E, 11 Jul 2012, *D.A. Krivenko 43566* (IRK).

Astragalus inopinatus Boriss.

2*n* = 16, CHN. Russia, Republic of Buryatiya, Okinskii Raion, upper part of Kitoi River, left bank, rare larch motley herbgreen moss forest, 1942 m, 52°03′16″N, 101°06′31″E, 28 Aug 2010, *S.G. Kazanovsky 16191* (IRK).

Astragalus rytyensis Stepants.

2*n* = 48, CHN. Russia, Irkutskaya Oblast', Ol'khonskii Raion, Olkhon Island on Baikal Lake, near of Shara-Nur Lake, edge pine motley herb forest, 53°06′39″N, 107°14′27″E, 15 Aug 2012, *D.A. Krivenko 32973* (IRK).

Entada rheedii Spreng.

2*n* = 28, CHN. Sri Lanka, Western Province, Sri Lanka Island, Kalatura District, vicinity of Bentota city, coast of Laccadive Sea of Indian Ocean, 06°24′57.90″N, 79°59′46.39″E, Jul 2015, *N.V. Ozolina s.n.* (IRK).

Hedysarum razoumowianum Helm. & Fisch. ex DC.

**2*n* = 32, CHN. Russia, Orenburgskaya Oblast', Perevolotskii Raion, near of Pretoriya village, Gusevka River, 52°15′28″N, 54°20′45″E, Jun 2013, *Yu.Z. Tabul'din s.n.* (SVER).

Hedysarum tscherkassovae var. *intermedium* Knjaz.

2*n* = 48, CHN. Russia, Orenburgskaya Oblast', Belyaevskii Raion, about 4 km of Donskoe village, right bank of Ural River, Verblyuzhka Mt., 51°23′14″N, 56°48′43″E, 1 Aug 2009, *M.S. Knyazev s.n.* (SVER).

Hedysarum zundukii Peschkova

2*n* = 16, CHN. Russia, Irkutskaya Oblast', Ol'khonskii Raion, west coast of Baikal Lake, Zunduk cape, rocky steep slope of eastern exposure, composed of crystalline limestones, mountain steppe, 469 m, 53°23′46″N, 107°24′47″E, 7 Aug 2009, *A.V. Verkhozina & Yu.N. Pochinchik 9563* (IRK).

Lathyrus humilis (Ser.) Spreng.

2*n* = 14, CHN. Russia, Irkutskaya Oblast', Nizhneilimskii Raion, in 57 km to NE of Novaya Igirma village, Bolshaya Yalyka River, about 17 km upstream from estuary, pine-juniper blueberry-cowberry green moss forest, 57°31′13″N, 104°33′16″E, 15 Aug 2012, *S.G. Kazanovsky & A.V. Verkhozina 24694* (IRK).

Medicago cancellata M.Bieb.

**2*n* = 16, CHN. Russia, Orenburgskaya Oblast', above of Kunakbai village, right bank of Bol'shoi Uran River, rocky slope, 52°19′49″N, 54°15′32″E, 3 Aug 2008, *M.S. Knyazev s.n.* (SVER).

Oxytropis caespitosa Pers.

**2*n* = 48, CHN. Russia, Republic of Buryatiya, Selenginskii Raion, Khamar-Daban Mts., 4 km of Gusinoozersk town, Tabkhor River, steppefied slope, *Agropyron-Chamaerhodos* stony steppe, 615 m, 51°21′17″N, 106°28′39″E, 11 Jul 2009, *S.G. Kazanovsky 12872* (IRK).

Oxytropis deflexa DC.

2*n* = 16, CHN. Russia, Irkutskaya Oblast', Ol'khonskii Raion, west coast of Baikal Lake, at ford through of Ulan-Khan River, at pond on lake shore, 53°20′11″N, 107°16′17″E, 7 Aug 2004, *A.V. Verkhozina & al. 2284* (IRK); Russia, Republic of Buryatiya, Tunkinskii Raion, vicinity of Zhemchug village, at turn into Vyshka natural boundary, grass motley herb meadow, 51°41′34″N, 102°24′15″E, 11 Oct 2011, *S.G. Kazanovsky 19774* (IRK).

**Oxytropis knjazevii* Vasjukov (≡ *Oxytropis tatarica* Knjaz.)

2*n* = 16, CHN. Russia, Republic of Bashkortostan, Ermekeevskii Raion, right bank of Ik River, below of Islambakhty village, 53°45′18″N, 53°42′17″E, 12 Jul 2009, *M.S. Knyazev s.n.* (SVER); Russia, Orenburgskaya Oblast', Buguruslanskii Raion, right bank of Mochegai River, above of Molchanovo village, Rybnaya Mt., rocky slope, 53°40′46″N, 52°53′47″E, 4 Aug 2009, *M.S. Knyazev s.n.* (SVER); Russia, Orenburgskaya Oblast', Buguruslanskii Raion, right bank of Malyi Kinel', about 3 km above of Bururuslan–Buzuluk highway, 53°28′41″N, 52°18′32″E, 4 Aug 2008, *M.S. Knyazev s.n.* (SVER); Russia, Orenburgskaya Oblast', Severnyi Raion, right bank of Sok River, above confluence with Malyi Sok River, 30 km of Severnyi village, rocky slope, 54°08′34″N, 52°33′51″E, 17 Jul 2009, *M.S. Knyazev s.n.* (SVER).

**Oxytropis peschkovae* Popov

2*n* = 48, CHN. Russia, Irkutskaya Oblast', Ol'khonskii Raion, west coast of Baikal Lake, Kharikta natural boundary, motley herb steppe, 747 m, 52°57′44″N, 106°48′27″E, 5 Aug 2009, *A.V. Verkhozina & D.A. Krivenko 9562* (IRK).

Vicia cracca L.

2*n* = 14, CHN. Russia, Republic of Buryatiya, Barguzinskii Raion, Baikal Lake, Barguzinskii Bay, Chivyrkuyskii sthmus, into 20 km to NNE of Ust'-Barguzin village (into 20 km to E of Glinka natural boundary), 53°34′27″N, 108°54′48″E, sand dunes, 26 Jul 2011, *A.V. Verkhozina 19388* (IRK); Russia, Irkutskaya Oblast', Tulunskii Raion, Zausaevo village, Kurzanka River, right bank, river bank, thicket shrubs (*Rosa*, *Spiraea*), 471 m, 54°37′36″N, 100°31′00″E, 10 Aug 2013, *S.G. Kazanovsky 29147* (IRK).

Vigna marina (Burm.) Merr.

2*n* = 22, CHN. Sri Lanka, Western Province, Sri Lanka Island, Kalatura District, vicinity of Bentota city, coast of Laccadive Sea of Indian Ocean, sand beach, 06°24′57.90″N, 79°59′46.39″E, Jul 2015, *N.V. Ozolina 46371* (IRK).

IRIDACEAE

Iris glaucescens Bunge

2*n* = 24, CHN. Kazakhstan, Pavlodarskaya Oblast', Bayanaul'skii Raion, Bayanaul State National Nature Park, nearof Birzhankol' Lake, rocky steppe, 50°49′03.83″N, 75°20′27.98″E, 30 Jun 2013, *D.A. Krivenko 40267* (IRK).

Iris ruthenica Ker Gawl.

2*n* = ca. 80, CHN. Russia, Republic of Altai, Shebalinskii Raion, vicinity of Topuchaya village, Seminskii Mts., Seminskii pass, rock surrounded by cedar forest, on stones with a layer of humus, 1889 m, 51°03′40″N, 85°40′04″E, 20 Jun 2013, *S.G. Kazanovsky 30072* (IRK).

LILIACEAE

Lilium pilosiusculum (Freyn) Miscz.

2*n* = 24, CHN. Russia, Republic of Buryatiya, Tunkinskii Raion, vicinity of Zun-Murino village, base of Siberian Institute of Plant Physiology and Biochemistry of the Siberian Branch of the Russian Academy of Sciences, Khyr-Gorkhon River, edge pine forest, 740 m, 51°43′14″N, 102°53′36″E, 24 Aug 2009, *S.G. Kazanovsky & Yu.N. Pochinchik 46483* (IRK).

LYCOPODIACEAE

Lycopodium annotinum L.

2*n* = 68, CHN. Russia, Irkutskaya Oblast', Kazachinsko-Lenskii Raion, vicinity of Kunerma railway station, Kunerma Lake, coast lake, mixed forest, 527 m, 55°45′44.5″N, 108°25′41.6″E, 10 Aug 2014, *S.G. Kazanovsky & D.A. Krivenko 45291* (IRK).

NELUMBONACEAE

Nelumbo nucifera Gaertn.

2*n* = 16, CHN. Russia, Republic of Dagestan, Kizlyarskii Raion, Krainovka village, channel, about 50 m of confluence of Caspian Sea, in water, 43°58′31.66″N, 47°23′11.02″E, 30 Aug 2015, *R.A. Murtazaliev 45230* (IRK).

OPHIOGLOSSACEAE

Ophioglossum vulgatum L.

2*n* = ca. 480, CHN. Russia, Leningradskaya Oblast', Luzhskii Raion, vicinity of Pozharishche village, development peat, 60 m, 58°48′04.1″N, 30°29′59.6″E, 22 Jun 2014, *P.G. Efimov 42273* (IRK).

RANUNCULACEAE

Arsenjevia baikalensis (Fisch. ex Turcz.) Starod.

2*n* = 28, CHN. Russia, Republic of Buryatiya, Kabanskii Raion, Baikal State Nature Biosphere Reserve, right bank of Vydrinaya River, valley with birchen-firryostrich fern-waldsteinia-motley herb forest, 487 m, 51°26′30″N, 104°53′57″E, 11 Aug 2011, *S.G. Kazanovsky 21131* (IRK).

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POACEAE

Poa nemoralis L.

2*n* = 42. CHN. *N* = 15. Tajikistan, Ridge Petr I, Tajikabad region, gorge Surkh-Dara, settlement Polezak, along brook, among bushes, 39°04.836′N, 70°53.936′E, 2046 m, 11 Aug 2012, *M. Olonova 12-52* (TK).

2*n* = 20;[1] 42. CHN. *N* = 10. Tajikistan, Ridge Petr I, Tajikabad region, gorge Dara, settlement Dara, the cliffs on the slope, 11 Aug 2012, *M. Olonova 12-49* (TK).

2*n* = 35; 42. CHN. *N* = 10. Tajikistan, Gissar Ridge, Varzob gorge, along Kandara river, the cliffs on the shady slope, 5 Aug 2012, *M. Olonova 12-38/1* (TK).

Poa relaxa Ovcz.

2*n* = 18, 20, 32, 42. CHN. *N* = 10. Tajikistan, Gissar ridge, pass Anzob, cliffs near meteorological station, 39°04.998′N, 68°51.253′E, 3428 m, 20 Aug 2012, *M. Olonova 12-57* (TK).

2*n* = 28, 35; 28; 35; 42. CHN. *N* = 20. Tajikistan, Ridge Petr I, Jirgitalskiy region, vicinity settlement Jaelgan, on the cliffs, 39°18.299′N, 71°14.592′E, 1800 m, 10 Aug 2012, *M. Olonova 12-45* (TK) [Fig. 5A].

2*n* = 35. CHN. *N* = 5. Tajikistan, Gissar ridge, vicinity biological station Seikho, cliffs along the brook, 39°03.324′N, 68°52.221′E, 2441m, 21 Aug 2012, *M. Olonova 12-60/1* (TK).

2*n* = 35, 42. CHN. *N* = 10. Tajikistan, Karateginskiy ridge, Rashtskiy region, vicinity settlement Nimichak, slope with buches, among

1 Chromosome numbers of different cells of the same sample are separated by a comma. Chromosome numbers of different samples are separated by semicolon.

stones, 39°06.699′N, 70°37.543′E, 1800 m, 7 Aug 2012, *M. Olonova 12-39/1* (TK) [Fig. 5D].

2*n* = 38, 42; 42. CHN. *N* = 10. Tajikistan, Gissar ridge, cliffs along Varzob road, 39°02.844′N, 68°59.291′E, 3047 m, 21 Aug 2012, *M. Olonova 12-60/6* (TK).

2*n* = 42; CHN. *N* = 10. Tajikistan, Jirgitalskiy region, Ridge Petr I, gorge Chilondy, vicinity settlement Erkobog, on the slope with dense bushes, 39°11.033′N, 71°16.378′E, 1896 m, 10 Aug 2012, *M. Olonova 12-47* (TK).

2*n* = 42; CHN. *N* = 10. Tajikistan, Jirgitalskiy region, Ridge Petr I, vicinity settlement Sebzor, on the cliffs, 1700 m, 10 Aug 2012, *M. Olonova 12-48* (TK).

2*n* = 42; CHN. *N* = 10. Tajikistan, Ridge Petr I, the bushy-stony slope opposite agricultural station, 39°13.342′N, 71°36.392′E, 2763 m, 8 Aug 2012, *M. Olonova 12-38/2* (TK).

2*n* = 42; CHN. *N* = 5. Tajikistan, Ridge Petr I, vicinity agricultural station, on the cliffs, 39°13.388′N, 71°36.471′E, 3005 m, 8 Aug 2012, *M. Olonova 12-44/1*(TK).

2*n* = 42; CHN. *N* = 10. Tajikistan, Ridge Petr I, vicinity settlement Yangi-Shaar, on the cliffs, 10 Aug 2012, *M. Olonova 12-46* (TK).

2*n* = 42; CHN. *N* = 5. Tajikistan, Gissar ridge, cliffs along the road, 39°05.073′N, 68°50.327′E, 3384 m, 20 Aug 2012, *M. Olonova 12-56/1* (TK) [Fig. 5B].

2*n* = 42; CHN. *N* = 10. Tajikistan, Gissar ridge, ascending on the pass Anzob, dry cliffs on the slope, 39°05.722′N, 68°50.739′E, 3141 m, 20 Aug 2012, *M. Olonova 12-56/8* (TK) [Fig. 5C].

2*n* = 42; CHN. *N* = 5. Tajikistan, Gissar ridge, dry cliffs on the slope, 39°02.844′N, 68°59.291′E, 3047 m, 21 Aug 2012, *M. Olonova 12-56/6* (TK).

2*n* = 42; CHN. *N* = 15. Tajikistan, Gissar ridge, white cliffs along the road, 39°02.849′N, 68°00.261′E, 3258 m, 21 Aug 2012, *M. Olonova 12-59/2* (TK) [Fig. 5E].

2*n* = 42; CHN. *N* = 5. Tajikistan, Gissar ridge, 65 km of Varzob road, on the cliffs, 21 Aug 2012, *M. Olonova 12-60/5* (TK).

Tajikistan is one of the richest floristic regions within non-tropical areas of Eurasia. Mountain areas are known to harbor a high variety of habitats and ecological niches, resulting in an increasing taxonomic diversity of plants. A landscape of high-altitudinal mountains with steep slopes, separating isolated valleys, has favored the isolation of plant populations and the preservation of their karyological and genetic diversities.

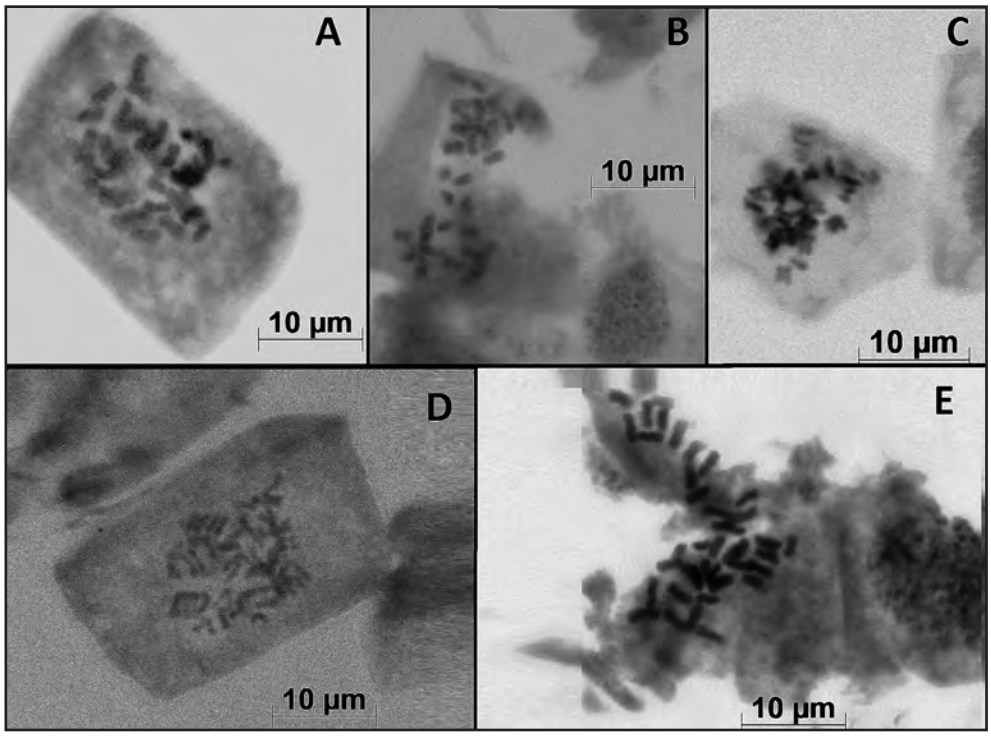

Fig. 5. Microphotographs of chromosome plates of studied individuals of *Poa relaxa* Ovzc. from Tajikistan. **A,** 2*n* = 42 (*12-45*); **B,** 2*n* = 42 (*12-56/1*); **C,** 2*n* = 42 (*12-56/8*); **D,** 2*n* = 42 (*12-39/1*); **E,** 2*n* = 42 (*12-59/2*).

Table 1. Morphometric characteristics of chromosomes in some studied *Poa relaxa* samplings from Tajikistan.

No. of sampling	2*n*	Chromosome size [µm]		Chromosome length/width	
		Length, min–max	Width, min–max	Min	Max
12-45	28, 35; 28; 35; 42 [Fig. 5A]	1.45–2.75	0.65–1.07	2.23	2.57
12-56/1	42 [Fig. 5B]	1.43–2.13	0.74–1.00	1.93	2.13
12-59/2	42 [Fig. 5E]	1.51–3.02	0.66–1.13	2.29	2.67
12-39/1	35, 42; 42 [Fig. 5D]	1.69–2.46	0.44–0.56	3.84	4.39

Bluegrasses of *Poa* sect. *Stenopoa* Dumort. constitute one of the most complex and intricate groups of temperate grasses. Species from this group are mostly distributed in Asia, making one of the most speciose, hybridogenous and polyploid-rich sections of *Poa*. Two species of *Poa* sect. *Stenopoa* are common in the lower and middle mountain belts of Tajikistan, mesomorphic *P. nemoralis* L. and xeromorphic *P. relaxa* Ovcz. *Poa nemoralis* is widely distributed in the temperate zone of Eurasia and North America, whereas *P. relaxa* is a Central Asian endemic species classified within the large Asian *Poa versicolor* aggregate (Tzvelev, 1976). Both species show high morphological variability, in particular in the territory of the Republic of Tajikistan (Ovchinnikov, 1933, Ovchinnikov & Chukavina, 1957; Paziy, 1962).

Karyological analysis of widespread *Poa nemoralis* has been done over the wide North Hemisphere area (Bolkovskikh & al., 1969; Tzvelev, 1976; Goldblatt, 1984; Probatova, 1984; Probatova & al., 2006, 2007) providing chromosome numbers of $2n = 14$ ($2x$), 28 ($4x$), 35 ($5x$) and 42 ($6x$) for the species. By contrast, chromosome data for the narrowly distributed *P. relaxa* are limited, and all of them correspond to $2n = 42$ hexaploid individuals (Middle Asia – Tzvelev, 1976; Tajikistan, gorge of river Kandara and Hissar mountain range – Astanova, 2007).

Review of extensive *Poa* collections in herbaria LE and TAD, and field observations made in Tajikistan during 2012 and 2016, confirmed the high morphological diversity and karyological polymorphism of *P. nemoralis* and *P. relaxa* in the region. Our search also revealed the presence of a highly intricate complex of taxa, probably including individuals of hybrid origin (Olonova & al., 2012; Olonova & Khisoriev, 2013).

The high morphological diversity of these species, revealed both at the inter- and intrapopulation levels, suggest the potential existence of a high genetic diversity within them. The first step to study this diversity was the study of their variation in chromosome numbers.

We examined the chromosome numbers within samples of *Poa nemoralis* (3 populations) and *P. relaxa* (15 populations) from Tajikistan. Each population sampled contained from 5 to 20 individual seeds. Chromosomal studies were performed following Pukhalskiy & al. (2007). Chromosome counting was done on root tip meristematic metaphase cells; chromosomes were stained with acetic-hematoxilin and visualized using an Axiostar plus microscope (Carl Zeiss) at 15×100 magnifications and image capture was performed with the software AxioVision LE. Micrographs were taken using a digital camera Axio Cam ERc 5s. *N* indicates number of individual seeds analyzed from each population.

Our study has found new chromosome numbers for *Poa nemoralis* and *P. relaxa* from individuals collected in Tajikistan. Pentaploidy has been revealed for the first time among *P. relaxa* populations (samples *12-39/1* [Fig. 5D], *12-45* [Fig. 5A], *12-60/1*). Mixoploidy, the existence of different numbers of chromosomes within the same individual, was detected in four samples – one of *Poa nemoralis* (*12-52*) and three of *P. relaxa* (*12-45* [Fig. 5A], *12-57*, *12-60/6*). A high intrapopulation chromosomal variability was found in all these samples, and in samples *12-38/1* of *P. nemoralis* and *12-39/1* [Fig. 5D] of *P. relaxa*, which correspond to populations with individuals showing different chromosome numbers. Chromosome counts of $2n = 20$ were found in mixoploid cells of both species, being the first record for *P. nemoralis* and *P.relaxa*, and also for *Poa* sect. *Stenopoa*.

Also, the length and width of chromosomes were measured within some samplings of *Poa relaxa* (Table 1). Chromosome length and width, and a comparative length/width ratio index, which describe the shape of chromosomes, vary within a relatively wide limits.

Morphological analysis of *Poa relaxa* samples from Tajikistan showed an almost complete absence of pubescence on the lemmas in samplings *12-56/6* and *12-59/2* [Fig. 5E], in contrast to the normal pubescence observed in the remaining studied samples. This phenotypic trait is not connected, however, with differences in chromosome number.

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AMARANTHACEAE

Kochia sieversiana (Pall.) C.A.Mey.

2*n* = 18, CHN. Russia, Far East, Primorskii Krai, in vicinity of the railway station Ugol'naya, on roadside, 1 Oct 2016, *V.A. Nechaev 13090* (VLA).

AMARYLLIDACEAE

Allium splendens Willd. ex Schult. & Schult.f.

2*n* = 16, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, middle course of the Yarap River, near the mouth of Bugar River, on the rocks, 14 Aug 2016, *V.Yu. Barkalov 13036* (VLA).

ASPHODELACEAE

Hemerocallis middendorffii Trautv. & C.A.Mey.

2*n* = 22, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, middle course of the Yarap River, in the mouth of Bugar River – the right affluent of Yarap River, riverside rocks, 14 Aug 2016, *V.Yu. Barkalov 13060* (VLA).

ASTERACEAE

Artemisia rubripes Nakai

2*n* = 16, CHN. Russia, Far East, Primorskii Krai, Shkotovskii Raion, near Rechitsa village, coastal sandy terrace at the mouth of Sukhodol River, left riverside, damp meadow, 30 Jun 2016, *S.V. Prokopenko 12981* (VLA); Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, upper course of the Nezhinka River, near the mouth of Razdol'nenskii spring, 24 May 2014, *V.Yu. Barkalov 12581* (VLA).

Artemisia stolonifera (Maxim.) Kom.

2*n* = 36, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, in vicinity of Tavrichanka settlement, damp forest (*Alnus japonica*), 26 Apr 2014, *V.A. Nechaev 12557* (VLA).

Leibnitzia anandria (L.) Turcz.

2*n* = 46, CHN. Russia, Far East, Primorskii Krai, Ussuriiskii Raion, the valley of Kazachka River, near Aleksee-Nikol'skoe settlement, forb meadow on the top of rocky hill, 19 May 2016, *V.A. Nechaev 12967* (VLA).

Ligularia sibirica (L.) Cass.

2*n* = 60, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, the mouth of Bugar River – affluent of the Yarap River in its middle course, the floodplain *Larix* forest, 14 Aug 2016, *V.Yu. Barkalov 13022* (VLA).

BRASSICACEAE

Arabidopsis petraea (L.) V.I.Dorof.

2*n* = 16, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, middle course of the Yarap River, on pebbles, 2 Aug 2016, *V.Yu. Barkalov 13038* (VLA).

CAMPANULACEAE

Campanula punctata Lam.

2*n* = 34, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, the valley of Yarap River, 12 km downstream from the confluence of Left Yarap and Right Yarap rivers, among shrubs, on the steep edge of terrace, 31 Jul 2016, *V.Yu. Barkalov 13100* (VLA).

CAPRIFOLIACEAE

Lonicera caerulea L.

2*n* = 18, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, middle course of the Yarap River, near 3 km above the mouth of Bugar River, *Larix* forest on the terrace, 16 Aug 2016, *V.Yu. Barkalov 13010* (VLA).

CARYOPHYLLACEAE

Stellaria longifolia Muhl. ex Willd.

2*n* = 26, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, middle course of the Yarap River, near the mouth of its affluent – the Bugar River, on pebbles, 14 Aug 2016, *V.Yu. Barkalov 13007* (VLA).

CRASSULACEAE

Orostachys japonica (Maxim.) A.Berger

2*n* = 24, CHN. Russia, Far East, Primorskii Krai, Ussuriyskii Raion, near Aleksee-Nikol'skoe settlement, on the rock, 24 May 2017, *V.A. Nechaev 13025* (VLA).

Orostachys spinosa (L.) Sweet

2*n* = 24, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, middle course of the Yarap River, near the mouth of its affluent – the Bugar River, on riverside rocks, 14 Aug 2016, *V.Yu. Barkalov 13023* (VLA).

ERICACEAE

Rhododendron aureum Georgi

2*n* = 26, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, middle course of the Yarap River, 1500 alt., *Betula ermanii* forest, 30 Jul 2016, *V.Yu. Barkalov 13041* (VLA).

Rhododendron dauricum L.

2*n* = 26, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, middle course of the Yarap River, in the *Larix* forest on the slope of a hill, 31 Jul 2016, *P.V. Krestov 13020* (VBGI).

EUPHORBIACEAE

Euphorbia lucorum Rupr.

2*n* = 28, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, Reid Pallada Gulf, Mt. Mramornaya, forb meadow on the slope, 16 Jun 2014, *V.Yu. Barkalov 12620* (VLA).

FABACEAE

Lespedeza davurica (Laxm.) Schindl.

2*n* = 40, CHN. Russia, Far East, Primorskii Krai, Khankaiskii Raion, the valley of Komissarovka River, on rocks, 25 Sep 2015, *V.A. Nechaev 13085* (VLA).

GROSSULARIACEAE

Ribes komarovii Pojark.

2*n* =16, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, in vicinity of the railway station Razdol'noe, stony slope, light forest, 12 Sep 2015, *V.A. Nechaev 13091* (VLA).

IRIDACEAE

Iris uniflora Pall. ex Link

2*n* = 32, CHN. Russia, Far East, Primorskii Krai, in vicinity of Nakhodka city, oak forest on the NW flat slope, near the open joint-stock company "Kompleks", 4 Jul 2016, *S.V. Prokopenko 12979* (VLA); Russia, Far East, Primorskii Krai, Partizanskii Raion, coastal rocks near Triozërye Bay, 18 Jul 2016, *S.V. Prokopenko 12988* (VLA).

Iris ventricosa Pall.

2*n* = 28, CHN. Russia, Far East, Primorskii Krai, Ussuriyskii Raion, the valley of Kazachka River, near Aleksee-Nikol'skoe settlement, the rocky top of a hill, the oak forest edge with *Rosa gracilipes*, forb meadow, 19 May 2016, *V.A. Nechaev 12966* (VLA).

LAMIACEAE

Clinopodium chinense (Benth.) Kuntze

2*n* = 20, CHN. Russia, Far East, Primorskii Krai, the coast of Amurskii Bay near the railway station Ugol'naya, at roadside, 17 Sep 2016, *V.A. Nechaev 13074* (VLA).

Lycopus alissoviae Prob.

2*n* = 22, CHN. Russia, Far East, Primorskii Krai, Khankaiskii Raion, the nature reserve "Khankaiskii", Sosnovyi Island, in *Calamagrostis* and *Artemisia* community on the lakeside of a small lake, 5 Sep 1992, *V.Yu. Barkalov 7115* (VLA).

Lycopus hirtellus Kom.

2*n* = 22, CHN. Russia, Far East, Primorskii Krai, Khankaiskii Raion, the nature reserve "Khankaiskii", the Przheval'skogo Peninsula, on the lakeside of Khanka Lake, sandy bank, 29 Jul 2002, *V.Yu. Barkalov 8874-b* (VLA).

Mentha canadensis L.

2*n* = 36, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, in vicinity of the railway station Nadezhdinskaya, the riverside of Razdol'naya River, 11 Aug 2012, *V.A. Nechaev 12155* (VLA).

LILIACEAE

Lilium pumilum Redouté

2*n* = 24+0–2B, CHN. Russia, Far East, Primorskii Krai, Ussuriyskii Raion, the valley of Kazachka River, near Aleksee-Nikol'skoe settlement, the oak forest, 19 May 2016, *V.A. Nechaev 12970* (VLA).

POACEAE

Arundinella anomala Steud.

2*n* = 34, CHN. Russia, Far East, Primorskii Krai, Oktjabr'skii Raion, between Fadeevka and Novogeorgievka settlements, steppe meadow, 27 Jul 2009, *V.A. Nechaev 11436* (VLA).

Arundinella hirta (Thunb.) Tanaka

2*n* = 36, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, Reid Pallada Gulf, Mt. Mramornaya, meadow on the stony slope, 16 Jun 2014, *V.Yu. Barkalov 12660* (VLA).

Bromopsis flexuosa (Drobow) Tzvelev

2*n* = 56, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, the valley of Yarap River, 12 km downstream from the confluence of Left Yarap and Right Yarap rivers, along the stony crease, 31 Jul 2016, *V.Yu. Barkalov 13047* (VLA).

Chloris virgata Sw.

2*n* = 20, CHN. Russia, Far East, Primorskii Krai, Khankaiskii Raion, Platono-Aleksandrovskoe settlement, 23 Sep 2015, *V.A. Nechaev 12886* (VLA); Russia, Far East, Primorskii Krai, Oktyabr'skii Raion, near Nikolo-L'vovskoe village, 8 Sep 2015, *V.A. Nechaev 13073* (VLA);

Dimeria neglecta Tzvelev

2*n* = 14, CHN. Russia, Far East, Primorskii Krai, Shkotovskii Raion, near Tsarevka village, at the mouth of the Petrovka River, right riverside, moist meadow, 8 Sep 2015, *S.V. Prokopenko 13065* (VLA).

Elymus amurensis (Drobow) Czerep.

2*n* = 28, CHN. Russia, Far East, Primorskii Krai, Shkotovskii Raion, near Petrovka village, the valley of Petrovka River, abrupt rubbly S slope, the community of *Artemisia freyniana*, 21 Jul 2015, *S.V. Prokopenko 13076* (VLA). This specimen was erroneously referred to *E. gmelinii* (Trin.) Tzvelev by Probatova & al. (2017).

Festuca mollissima V.I.Krecz. & Bobr.

2*n* = 14, CHN. Russia, Far East, Primorskii Krai, Partizanskii Raion, near Triozërye Bay, coastal rocks, 18 Jul 2016, *S.V. Prokopenko 12971* (VLA).

Festuca ovina L.

2*n* = 14, CHN. Russia, Far East, Primorskii Krai, Partizanskii Raion, the coast of Vostok Bay, maritime plain, forb meadow, 29 Jun 2002, *V.A. Nechaev 8840* (VLA); Russia, Far East, Primorskii Krai, Shkotovskii Raion, near Bol'shoi Kamen' settlement, Sukhodol Bay, coastal sands, 21 Jun 2008, *V.A. Nechaev 11005* (VLA).

Poa skvortzovii Prob.

2*n* = 28, CHN. Russia, Far East, Primorskii Krai, Khankaiskii Raion, near Turii Rog town, lakeside of the Khanka Lake, oak forest edge (*Quercus mongolica*), 21 May 2015, *V.A. Nechaev 12767* (VLA).

2*n* = 42, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, the flood-plain of Yarap River, 12 km downstream from the confluence of Left Yarap and Right Yarap rivers, on the overgrown riverside pebbles, 31 Jul 2016, *V.Yu. Barkalov 13049* (VLA).

2*n* = 56, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, at the mouth of Bugar River – right affluent of the Yarap River in its middle course, on riverside rocks, among shrubs, 14 Aug 2016, *V.Yu. Barkalov 13044* (VLA).

Poa vorobievii Prob.

2*n* = 28, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, Reid Pallada Gulf, Mramornaya Bay, sandy-pebbly coastal terrace, 16 Jun 2014, *V.Yu. Barkalov 12630* (VLA).

Puccinellia hauptiana (Trin. ex V.I.Krecz.) Kitag.

2*n* = 28, CHN. Russia, Far East, Primorskii Krai, the Nakhodka city district, near Srednyaya settlement, the Srednyaya Bay, on coastal sands, 5 Jul 2016, *S.V. Prokopenko 12977* (VLA).

PRIMULACEAE

Lysimachia volkovae Prob.

2*n* = 24, CHN. Russia, Far East, Primorskii Krai, in vicinity of Nakhodka city, near Mt. Brat, light oak forest, 29 Jul 2011, *V.A. Nechaev 11875* (VLA).

ROSACEAE

Duchesnea indica (Andrews) Teschem.

2*n* = 42, CHN. Russia, Far East, Primorskii Krai, Muravëv-Amurskii Peninsula (Vladivostok), Akademgorodok, as a rare weed in plantations near the Institute of Biology & Soil Science FEB RAS, 15 Sep 2016, *V.A. Nechaev 13019* (VLA).

Spiraea elegans Pojark.

2*n* = 18, CHN. Russia, Far East, Khabarovskii Krai, Verkhnebureinskii Raion, Badzhalskii Range, the mouth of Bugar River – right affluent of the Yarap River in its middle course, riverside rocks, 14 Aug 2016, *V.Yu. Barkalov 13011* (VLA).

VIOLACEAE

Viola austroussuriensis (W.Becker) Kom.

2*n* = 24, CHN. Russia, Far East, Primorskii Krai, Ussuriyskii Raion, Borissovskoe Plateau, the upper course of Listvennichnaya River, near Mt. Perekrestnaya, oak forest with *Larix*, damp plots, 6 Jun 2016, *V.Yu. Barkalov 12974* (VLA).

Viola muehldorfii Kiss

2*n* = 24, CHN. Russia, Far East, Primorskii Krai, Ussuriyskii Raion, Borissovskoe Plateau, the upper course of Kamenistyi brook – the affluent of Listvennichnaya River, broadleaved forest on the slope, 8 Jun 2016, *V.Yu. Barkalov 12975* (VLA).

Literature cited

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* First chromosome count for the species.

ASTERACEAE

Erigeron politus Fr.

2*n* = 18, CHN. Russia, East Siberia, Republic of Buryatia, Severo-Baikal'skii Raion, in vicinity of Nizhneangarsk settlement, the lakeside of the Baikal Lake, 452 m, swamped meadow, 7 Aug 2014, *D.A. Krivenko 12984* (IRK, VLA).

Senecio nemorensis L.

2*n* = 40, CHN. Russia, East Siberia, Republic of Buryatia, Tunkinskii Raion, the lower course of the Belyi Irkut River, right riverside, 1615 m, shaded rocks, 24 Aug 2015, *S.G. Kazanovsky 12991* (IRK, VLA).

Sonchus arvensis L.

2*n* = 36, CHN. Russia, East Siberia, Irkutskaya Oblast', Kazachinsko-Lenskii Raion, 15 km of Okunaiskii settlement, the Lake Kholodnoe, 425 m, on the place of dried saline pool, 11 Aug 2014, *D.A. Krivenko 12986* (IRK, VLA).

Taraxacum ceratophorum (Ledeb.) DC.

2*n* = 16, CHN. Russia, Far East, Kamchatskii Krai, Olyutorskii Raion, Korf settlement, the spit, on the waste place, 25 Jul 2016, *O.A. Chernyagina & V.E. Kirichenko 13043* (VLA).

Taraxacum lateritium Dahlst.

2*n* = 24, CHN. Russia, Far East, Kamchatskii Krai, Olyutorskii Raion, the Apuka River basin, Achaivayam settlement, disturbed meadow, 17 Jun 2016, *O.A. Chernyagina & V.E. Kirichenko 13046* (VLA).

Taraxacum officinale F.H.Wigg. s.l.

2*n* = 24, CHN. Russia, Far East, Kamchatka Peninsula, Mil'kovskii Raion, Mil'kovo settlement, on the waste place, often, 10 Sep 2016, *O.A. Chernyagina & V.E. Kirichenko 13048* (VLA).

Taraxacum soczavae Tzvelev

2*n* = 24, CHN. Russia, Far East, Kamchatskii Krai, Olyutorskii Raion, Achaivayam settlement, roadside of the abandoned landing strip, the overgrown disturbed plots, on pebble and gruss, 18 Jun 2016, *O.A. Chernyagina & V.E. Kirichenko 13015* (VLA).

BRASSICACEAE

Descurainia sophia (L.) Webb ex Prantl

2*n* = 28, CHN. Russia, Far East, Kamchatka Peninsula, Mil'kovskii Raion, Mil'kovo settlement, on the waste place, 10 Sep 2016, *O.A. Chernyagina 13117* (VLA).

Isatis oblongata DC.

2*n* = 28, CHN. Russia, East Siberia, Irkutskaya Oblast', Ol'khonskii Raion, the lakeside of the Baikal Lake, Aya Bay, 455 m, 16 Aug 2014, *D.A. Krivenko 12990* (IRK, VLA).

Rorippa palustris (L.) Besser

2*n* = 32, CHN. Russia, East Siberia, Republic of Buryatia, Severo-Baikal'skii Raion, in vicinity of Nizhneangarsk settlement, the Baikal Lake, Yarki Isl., 521 m, on lakeside sands, 8 Aug 2014, *D.A. Krivenko 13003* (IRK, VLA).

CARYOPHYLLACEAE

Dianthus superbus L.

2*n* = 30, CHN. Russia, East Siberia, Irkutskaya Oblast', Cheremkhovskii Raion, near Golumet' village, right riverside of the Golumet' River, waterless meadow, 23 Jul 2015, *D.A. Krivenko 12963* (IRK, VLA).

CELASTRACEAE

Parnassia palustris L.

2*n* = 18, CHN. Russia, East Siberia, Republic of Buryatia, Tunkinskii Raion, left riverside of the Dolbaika River, 913 m, sandy-pebbly swamped riverside, 25 Aug 2015, *S.G. Kazanovsky 12959* (IRK, VLA).

EUPHORBIACEAE

Euphorbia virgata Waldst. & Kit.

2*n* = 60, CHN. Russia, East Siberia, Republic of Buryatia, Kurumkanskii Raion, 12 km N of Kurumkan settlement, the route R-438, right riverside of Barguzin River, stony-sandy roadside, 5 Jul 2015, *D.A. Krivenko 12965* (IRK, VLA).

FABACEAE

Astragalus suffruticosus DC.

2*n* = 16, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, near Fofonovo village, right riverside of the Selenga River, 483 m, grassland steppe (with *Artemisia, Bromopsis, Poa*), 9 Jul 2009, *S.G. Kazanovsky 12435* (IRK, VLA).

Glycyrrhiza pallidiflora Maxim.

2*n* = 16, CHN. Russia, Far East, Khabarovskii Krai, Khabarovsk city, Kirovskii Raion, near the secondary school 38, right riverside of the Amur River, 92 m, on the railway embankment, 28 Jun 2001, *L.A. Antonova* 32679 (IRK).

Trifolium arvense L.

2*n* = 14, CHN. Russia, Far East, Khabarovskii Krai, Komsomol'skna-Amure city, near the railway station, 16 Sep 2015, *D.A. Krivenko 45598* (IRK); Russia, Far East, Khabarovskii Krai, Vaninskii Raion, Tumnin settlement, the railway station, on the railway embankment, 17 Sep 2015, *D.A. Krivenko 45601* (IRK).

IRIDACEAE

Iris biglumis Vahl

2*n* = 40, CHN. Russia, East Siberia, Republic of Buryatia, Kyakhtinskii Raion, near Ust'-Kyakhta village, right riverside of the Selenga River, 570 m, saline steppe with *Achnatherum splendens* and *Iris biglumis*, 13 Aug 2015, *S.G. Kazanovsky 12994* (IRK, VLA).

Pardanthopsis dichotoma (Pall.) L.W.Lenz

2*n* = 32, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Voznessenka village, 731 m, grass-forb meadow steppe, 29 Aug 2013, *S.G. Kazanovsky 12826* (IRK, VLA).

LILIACEAE

Lilium pilosiusculum (Freyn) Miscz.

2*n* = 24, CHN. Russia, East Siberia, Irkutskaya Oblast', Ust'-Ordynskii Buryatskii Natsional'nyi Okrug, Ekhirit-Bulagatskii Raion, 13 km of Ust'-Ordynskii settlement on the way to Irkutsk city, 480 m, *Betula* forest, 16 Aug 2015, *D.A. Krivenko 12956* (IRK, VLA).

OROBANCHACEAE

Rhinanthus serotinus Oborny

2*n* = 14, CHN. Russia, East Siberia, Republic of Buryatia, Tunkinskii Raion, near Zhemchug village, right riverside of the Irkut River, the locality Vyshka, 693 m, grass-forb meadow, 11 Oct 2011, *S.G. Kazanovsky 12040* (IRK, VLA).

PAEONIACEAE

Paeonia anomala L.

2*n* = 10, CHN. Russia, East Siberia, Irkutskaya Oblast', Nizhneudinskii Raion, foothills of East Sayan, 15 km of Porog settlement, the upstream of the Uda River, right riverside, near the nature monument "Bogatyrskie peshchery", ravine with forbs and ferns, 29 Jul 2015, *D.A. Krivenko 13125* (IRK, VLA).

POACEAE

Agropyron peschkovae Tzvelev

2*n* = 28, CHN. Russia, East Siberia, Irkutskaya Oblast', Ol'khonskii Raion, the Baikal Lake, the bottom of Ulan-Khada Peninsula, Kurkutskaya Bay, 548 m, light *Larix* forest on the stony slope, 16 Aug 2015, *D.A. Krivenko 12838* (IRK, VLA).

Anthoxanthum odoratum L.

2*n* = 20, CHN. Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, near Tolbazikha village, left riverside of the Tolbazikha River, 566 m, *Pinus*, *Abies*, *Picea* and *Betula* forest with *Vaccinium myrtillus*, 15 Jul 2014, *S.G. Kazanovsky 12995* (IRK, VLA).

Bromopsis inermis (Leyss.) Holub

2*n* = 56, CHN. Russia, Far East, Kamchatka Peninsula, Petropavlovsk-Kamchatskii city, microdistrict "Gorizont", between Orbital'nyi Str. and Zvezdnaya Str., near the building and on the slope, 17 Sep 2015, *O.A. Chernyagina 13087* (VLA).

Calamagrostis brachytricha Steud.

2*n* = 49, CHN. Russia, Far East, Primorskii Krai, Muravëv-Amurskii Peninsula (Vladivostok), Akademgorodok, forest edge, on the way to the institutes FEB RAS, 17 Oct 2016, *O.A. Chernyagina 13029* (VLA).

Dactylis glomerata L.

2*n* = 28, CHN. Russia, East Siberia, Irkutskaya Oblast', Slyudyanskii Raion, the lower course of the Solzan River, left riverside (near the bridge), on pebbles at the bed of the river, 22 Oct 2014, *O.P. Vin'kovskaya 12996* (IRK, VLA).

Danthonia riabuschinskii (Kom.) Kom.

2*n* = 36, CHN. Russia, Far East, Kamchatka Peninsula, Bystrinskii Raion, along the bed of dried rivulet, 364 m, 3 Aug 2014, *V.V. Buryi 13097* (VLA); Russia, Far East, Kamchatka Peninsula, Bystrinskii Raion, the valley of Ketachan River, Ketachanskii cordon, 582 m, forb meadow near the inspector's house, 8 Aug 2015, *V.V. Buryi 13099* (VLA); Russia, Far East, Kamchatka Peninsula, Elizovskii Raion, the valley of Nalychevo River, the Nalychevskii nature park, dwarf shrub tundra, 14 Aug 2015, *O.A. Chernyagina 13095* (VLA).

Elymus confusus (Roshev.) Tzvelev

2*n* = 28, CHN. Russia, Far East, Kamchatka Peninsula, Bystrinskii Raion, at the roadside for off-road vehicles, 601 m, 3 Aug 2013, *V.V. Buryi 12819* (VLA).

Elymus sibiricus L.

2*n* = 28, CHN. Russia, East Siberia, Irkutskaya Oblast', Ol'khonskii Raion, the Baikal Lake, Ol'khon Isl., locality Peschanka, 467 m, on sands, 17 Aug 2012, *D.A. Krivenko 12982* (IRK, VLA).

Hordeum jubatum L.

2*n* = 28, CHN. Russia, East Siberia, Irkutskaya Oblast', Irkutsk city, the left riverside of Angara River, between the railway stations Irkutsk terminal and Akademicheskaya, 429 m, on the railway embankment, 19 Jul 2012, *A.V. Verkhozina & D.A. Krivenko 12560* (IRK, VLA); Russia, Far East, Kamchatka Peninsula, Karaginskii Raion, Ossora settlement, near the airport, roadside, 8 Sep 2015, *O.A. Chernyagina 13092* (VLA).

Poa alpigena Lindm.

2*n* = 70, CHN. Russia, Far East, Kamchatka Peninsula, Bystrinskii Raion, the valley of Ketachan River, Ketachanskii cordon, 582 m, forb meadow near the inspector's house, 8 Aug 2015, *V.V. Buryi 13094* (VLA).

* *Poa czazhmensis* Prob.

2*n* = 70, CHN. Russia, Far East, Kamchatskii Krai, Olyutorskii Raion, the valley of Apukvayam River, *Populus* forest along the left affluent of Apukvayam River, temporary waterway, pebbly spit, 9 Jul 2016, *O.A. Chernyagina & V.E. Kirichenko 13123* (VLA).

Poa glauca Vahl

2*n* = 56, CHN. Russia, Far East, Kamchatskii Krai, Olyutorskii Raion, Achaivayam settlement, ca. 100 m, on the waste ground, 17 Jul 2016, *O.A. Chernyagina 13039* (VLA).

Poa palustris L.

2*n* = 28, CHN. Russia, Far East, Kamchatka Peninsula, Ust'-Bol'sheretskii Raion, Bol'she-Bannye hot springs, grass meadow (*Calamagrostis*) along riverside, 8 Aug 2014, *O.A. Chernyagina & L. Shtreker 12714* (VLA); Russia, Far East, Kamchatka Peninsula, Bystrinskii Raion, outskirts of Esso settlement, 497 m, forb meadow, 11 Jul 2014, *V.V. Buryi 12712* (VLA).

Puccinellia hauptiana (Trin. ex V.I.Krecz.) V.I.Krecz.

2*n* = 28, CHN. Russia, Far East, Kamchatka Peninsula, Elizovskii Raion, Nachikinskie hot springs, 4 Jul 2013, *O.A. Chernyagina & L. Shtreker 12455* (VLA); Russia, Far East, Kamchatskii Krai, Olyutorskii Raion, Achaivayam settlement, on the edge of neglected vegetable garden, 18 Jul 2016, *O.A. Chernyagina 13028* (VLA).

Setaria pachystachys (Franch. & Sav.) Matsum.

2*n* = 18, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, Peninsula Gamov, 2.5–3 km of Andreevka settlement, on the way to Vityazi Bay, the locality Rissovaya Pad', clay-sandy slope, 19 Oct 2013, *D.A. Krivenko 12548* (IRK, VLA).

Trisetum molle Kunth

2*n* = 28, CHN. Russia, Far East, Kamchatskii Krai, Olyutorskii Raion, Achaivayam settlement, ca. 100 m, 17 Jul 2016, *O.A. Chernyagina & V.E. Kirichenko 13121* (VLA).

POLYGONACEAE

Rumex acetosella L.

2*n* = 28, CHN. Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, 10 km S of Ust'-Barguzin settlement, the route R-438, 490 m, clay slope of the road, 5 Jul 2015, *D.A. Krivenko 12983* (IRK, VLA).

Rumex patientia L.

2*n* = 40, CHN. Russia, East Siberia, Irkutskaya Oblast', Irkutsk city, Akademgorodok, right riverside of the Angara River, grass-forb meadow, 10 Sep 2011, *G.V. Matjashenko 12436* (IRK, VLA).

PRIMULACEAE

Androsace amurensis Prob.

2*n* = 20, CHN. Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, near Yagodnoe village, 711 m, grass steppe, 30 Jun 2015, *D.A. Krivenko 12997* (IRK, VLA).

SCROPHULARIACEAE

Scrophularia incisa Weinm.

2*n* = 48, CHN. Russia, East Siberia, Irkutskaya Oblast', Ol'khonskii Raion, W lakeside of the Baikal Lake, Cape Zunduk, right riverside of Zunduk River, 455 m, pebbly lakeside of Baikal, 7 Aug 2009, *Yu.N. Pochinchik 12825* (IRK, VLA).

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* First chromosome count for the species.
** New chromosome number (cytotype) for the species.
▲ Counts were made by A.P. Sokolovskaya.

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ASTERACEAE

Bidens parviflora Willd.

2*n* = 24, CHN. Russia, Far East, Primorskii Krai, Mikhailovskii Raion, N outskirts of Novoshakhtinskii town, the railway station Ozërnaya Pad', as a weed at the railway road 11, 18 Oct 2010, *V.T. Lapenko 11869* (VLA).

2*n* = 48, CHN. Russia, Far East, Primorskii Krai, Mikhailovskii Raion, 1.5 km SW of Novoshakhtinskii town, the bottom of railroad embankment, near the railway bridge, 25 Sep 2016, *V.T. Lapenko 13096* (VLA).

Centaurea cyanus L.

2*n* = 24, CHN. Russia, Far East, Primorskii Krai, Dal'negorskii Raion, 1.5 km N of Kamenka village, waste place, near the fur farm, 6 Aug 2016, *V.T. Lapenko 13098* (VLA).

Crepis setosa Haller f.

2*n* = 12, CHN. Russia, North Caucasus, Krasnodarskii Krai, Abinskii Raion, near Shapsugskaya settlement, 18 km S of Abinsk town, on the bank of Abin River, in forest, 1 Sep 2009, *N.S. Probatova & V.P. Seledets 12347* (VLA).

Crepis tectorum L.

2*n* = 8, CHN. Russia, Far East, Khabarovskii Krai, Poliny Ossipenko Raion, Amgun' settlement, 24 Jun 2013, *L.A. Antonova 13122* (VLA).

Galinsoga parviflora Cav.

2*n* = 16, CHN. Russia, Far East, Khabarovskii Krai, Poliny Ossipenko Raion, Berëzovyi settlement, 24 Jun 2013, *L.A. Antonova 13112* (VLA).

Leontodon autumnalis L.

2*n* = 12, CHN. Russia, Far East, Khabarovskii Krai, Poliny Ossipenko Raion, Briakan settlement, 24 Jul 2013, *L.A. Antonova 13115* (VLA); Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, the area of the railway station Kiparissovo, 3.5 km of Taëzhnoe settlement, the summer village "Kiparis", as a weed in vegetable garden, 6 Sep 2015, *E.G. Rudyka 13078* (VLA).

Pterocypsela indica (L.) C.Shih

2*n* = 18, CHN. Russia, Far East, Primorskii Krai, Mikhailovskii Raion, NW outskirts of Novoshakhtinskii town, on the railway tracks 7–9, 16 Sep 2016, *V.T. Lapenko 13103* (VLA).

Sigesbeckia pubescens (Makino) Makino

2*n* = 30, CHN. Russia, Far East, Primorskii Krai, Peter the Great Bay, Russkii Island, Shigino, at the foot of forest slope, 22 Aug 2011, *E.G. Rudyka 11889* (VLA).

***** *Taraxacum stepanovae* Vorosch.

▲2*n* = 32, CHN. Russia, Far East, Kamchatskaya Oblast', Koryakskii Natsional'nyi Okrug, Olyutorskii Raion, Apuka settlement, the coast of Bering Sea, 20 Jul 1965, *A.P. Sokolovskaya 106* (VLA).

BORAGINACEAE

Lappula squarrosa Dumort.

2*n* = 24, CHN. Russia, Far East, Khabarovskii Krai, Poliny Ossipenko Raion, Berëzovyi settlement, 24 Jun 2013, *L.A. Antonova 13109* (VLA).

CARYOPHYLLACEAE

Stellaria graminea L.

2*n* = 26, CHN. Russia, Far East, Khabarovskii Krai, Poliny Ossipenko Raion, Briakan settlement, 24 Jul 2013, *L.A. Antonova 13114* (VLA).

ERICACEAE

Rhododendron sichotense Pojark.

2*n* = 26, CHN. Russia, Far East, Primorskii Krai, Terneiskii Raion, Sikhote-Alinskii biosphere nature reserve, 8 May 2012, *I.A. Nesterova 13032* (VLA).

FABACEAE

Vicia amurensis Oett.

2*n* = 12, CHN. Russia, Far East, Primorskii Krai, Muravëv-Amurskii Peninsula, the area of Murav'inaya (Tavaiza) Bay, near nature monument "Chernopikhtarnik", the floodplain of the spring Murav'inyi, 21 Oct 2004, *N.S. Probatova & V.P. Seledets 9757* (VLA).

Vicia unijuga A.Braun

2*n* = 12, CHN. Russia, Far East, Primorskii Krai, Partizanskii Raion, in vicinity of Avangard settlement, Vostok Bay, zakaznik of Biological station "Vostok", on the slope of marine terrace in Priboynaya Bay, 2 Sep 1997, *N.S. Probatova & V.P. Seledets 7355* (VLA); Russia, Far East, Primorskii Krai, Muravëv-Amurskii Peninsula, the area of Murav'inaya (Tavaiza) Bay, near nature monument "Chernopikhtarnik", the floodplain of the spring Murav'inyi, 21 Oct 2004, *N.S. Probatova & V.P. Seledets 9758* (VLA).

IRIDACEAE

Iris uniflora Pall. ex Link

2*n* = 32, CHN. Russia, Far East, Primorskii Krai, Dal'negorskii Raion, suburbs of Dal'negorsk town, Mt. Televizionnaya, on the small path along the mountain ridge, towards Mt. Solontsovaya, siltstones, 8 Jul 2016, *G.M. Gulariants 12989* (VLA).

JUNCAGINACEAE

Triglochin maritima L.

2*n* = ca. 80, CHN. Russia, Far East, Primorskii Krai, Shkotovskii Raion, salt coastal depression, pasture, 25 Sep 1979, *N.S. Probatova & E.G. Rudyka 5516* (VLA).

MALVACEAE

Althaea officinalis L.

2*n* = 42, CHN. Russia, North Caucasus, Krasnodarskii Krai, Abinskii Raion, near Erivanskaya settlement, on the pebbles of Abin River, 5 Sep 2009, *N.S. Probatova & V.P. Seledets 11593* (VLA).

OXALIDACEAE

Xanthoxalis repens (Thunb.) Moldenke

2*n* = 24, CHN. Russia, Far East, Amurskaya Oblast', Blagoveschensk city, as a weed on the lawn in Relochnaya Str., 5 Oct 2007, *N.S. Probatova & V.P. Seledets 10694* (VLA).

Xanthoxalis stricta (L.) Small

2*n* = 24, CHN. Russia, Far East, Primorskii Krai, Chernigovskii Raion, 5 km N of Buyanki railway station, at the forest road, 17 Sep 2014, *V.T. Lapenko 12681* (VLA).

PLANTAGINACEAE

Plantago depressa Willd.

2*n* = 12, CHN. Russia, Far East, Magadanskaya Oblast', Ten'kinskii Raion, 332nd km of the Ten'kinskaya route, Biological station "Kontakt" of the Institute of Biological Problems of the Nord FEB RAS, the brook "Kontaktovyi", on pebbles, 20 Aug 1993, *N.S. Probatova & V.P. Seledets 7186* (VLA).

Plantago lanceolata L.

2*n* = 12, CHN. Russia, North Caucasus, Krasnodarskii Krai, Novorossiiskii Raion, in vicinity of Raevskaya settlement, the Volchii Vorota Pass, rubbly marl placer, 3 Sep 2009, *N.S. Probatova & V.P. Seledets 11772* (VLA).

POACEAE

Agrostis clavata Trin.

2*n* = 42, CHN. Russia, Far East, Primorskii Krai, Khorol'skii Raion, near Yaroslavskii settlement, as a weed in the corn plantation, 2 Jul 2016, *A.V. Gapeka 13001* (VLA).

Alopecurus aequalis Sobol.

2*n* = 14, CHN. Russia, Far East, Khabarovskii Krai, Poliny Ossipenko Raion, Briakan settlement, 24 Jul 2013, *L.A. Antonova 13113* (VLA).

Deschampsia amurensis Prob.

2*n* = 26, CHN. Russia, Far East, Amurskaya Oblast', near Tyndinskii settlement, left riverside of the Tynda River, riverside pebbles on the bank, 7 Jun 1975, *N.S. Probatova & E.G. Rudyka 4015* (VLA); Russia, Far East, Amurskaya Oblast', 122 km above the mouth of Selemdzha River, right riverside of the Selemdzha River, at the wharf Dagmara, on the pebbles, 31 Aug 1976, *N.S. Probatova & V.P. Seledets 4458* (VLA); Russia, Far East, Amurskaya Oblast', in vicinity of Blagoveshchensk city, near Verkhnii Blagoveshchensk settlement, 500 m from the shore of the Amur River, 3 km along the riverside, 10 Jul 2004, *E. Ivanykina 9632* (VLA). — Earlier (Probatova & al., 2014), before the description of *D. amurensis* Prob. (Probatova, 2015) these specimens were referred to *D. sukatschewii* (Popl.) Roshev.

Digitaria sanguinalis (L.) Scop.

2*n* = 36, CHN. Russia, North Caucasus, Krasnodarskii Krai, Tamanskii Peninsula, the spit Chushka, between Port-Kavkaz and Port-Iljich, near Dinskoi estuary (the Black Sea), roadside, 12 Oct 2008, *N.S. Probatova & V.P. Seledets 12354* (VLA).

Elymus sibiricus L.

2*n* = 28, CHN. Russia, Far East, Khabarovskii Krai, Poliny Ossipenko Raion, Amgun' settlement, 24 Jun 2013, *L.A. Antonova 13111* (VLA).

Eragrostis pilosa (L.) P.Beauv.

2*n* = 40, CHN. Russia, Far East, Primorskii Krai, Vladivostok city, Ovchinnikova Str., as a weed on the flower-bed, 1 Sep 2010, *N.S. Probatova & V.P. Seledets 12114* (VLA).

Festuca dahurica (St.-Yves) V.I.Krecz. & Bobrov

2*n* = 14, CHN. Russia, East Siberia, Republic of Buryatia, Mukhorshibirskii Raion, near Olon-Sheber Lake, on sands, 3 Jun 2010, *A. Gnutikov & Yu. Gnutikova 12234* (VLA).

Hordeum jubatum L.

2*n* = 28, CHN. Russia, East Siberia, Republic of Sakha (Yakutia), central part, 30 km of Kysyl-Syr village, the barkhan sands Staryi Tukulan, 25 Jul 2015, *I.A. Galanina 12926* (VLA).

Koeleria tokiensis Domin

2*n* = 14, CHN. Russia, Far East, Primorskii Krai, Dal'negorskii Raion, 2 km of Kamenka settlement, on the way to Oprichninka River, hayland, 19 Jul 2013, *V.T. Lapenko 12446* (VLA).

Phleum pratense L.

2*n* = 42, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, 15 km of Nezhino village, near the hunter's farm "Nezhinskoe", abandoned field, 7 Jul 2017, *A.V. Gapeka 13128* (VLA).

***Poa badensis* Haenke ex Willd.

2*n* = 42, CHN. Russia, North Caucasus, Krasnodarskii Krai, NW part of the Bol'shoi Kavkazskii Mountain Ridge, Kamennoe More Range, the Lagonaki Plateau, 2200 m, alpine meadow, 12 Sep 1991, *N.S. Probatova & V.P. Seledets 6969* (VLA).

**Poa* ×*magadanensis* Prob.

▲2*n* = 70–72, CHN. Russia, Far East, Kamchatka, Petropavlovsk-Kamchatskii city, near the top of Nikol'skaya Hill, along the border of the slope to seacoast, 22 Aug 1969, *N.S. Probatova & V.P. Seledets 2232* (VLA).

This specimen was first referred to *P. malacantha* Kom. (Sokolovskaya & Probatova, 1973).

Poa skvortzovii Prob.

2*n* = 42, CHN. Russia, Far East, Khabarovskii Krai, Khabarovskii Raion, the Kur River basin, the riverside of Malyi Kukachan River (right tributary of Yarap River), on the edge of alluvial terrace, 17 Aug 2011, *A.V. Ermoshkin 12817* (VLA).

Poa tenkensis Prob.

2*n* = 28, CHN. Russia, Far East, Magadanskaya Oblast', Ten'kinskii Raion, Matrossova mine, waste ground, 14 Aug 2008, *D.C. Lyssenko 11451* (VLA); Russia, Far East, Magadanskaya Oblast', Yagodninskii Raion, Yagodnoe settlement, at the road, 20 Jul 2008, *D.C. Lyssenko 11453* (VLA).

Poa transbaicalica Roshev.

2*n* = 42, CHN. Russia, Far East, Khabarovskii Krai, Ul'chskii Raion, zakaznik "Udyl'", Trekhgorbyi Island in 27 km of the Ukhta channel, riverside steep, in the fissure of the rock, 23 Jul 2010, *G.V. Van 12009* (VLA).

Puccinellia dolicholepis V.I.Krecz.

2*n* = 28, CHN. Russia, Volga Region, Astrakhanskaya Oblast', right-bank of the Volga River, the salt lake Tinaki-1, *Artemisia* and *Salsola* desert, 28 Aug 2009, *N.S. Probatova & V.P. Seledets 12012* (VLA).

Puccinellia hauptiana (Trin. ex V.I.Krecz.) V.I.Krecz.

2*n* = 28, CHN. Russia, Far East, Primorskii Krai, Dal'negorskii Raion, near Lidovka village, on matted sandy sediments between highway and seacoast, at the mouth of Akhobe River, 6 Aug 2015, *G.M. Gulariants 12807* (VLA).

Puccinellia tzvelevii Ovczinnikova & Prob.

2*n* = 28, CHN. Russia, Far East, Primorskii Krai, Ussuriiskii city district, Timiryazevskii settlement, as a ruderal weed, 27 Jun 2016, *A.V. Gapeka 13075* (VLA).

Schizachne komarovii Roshev.

2*n* = 20, CHN. Russia, Far East, Kamchatka, Ust'-Kamchatskii Raion, near Kozyrevsk settlement, *Larix* and *Betula* forest, on the clearing, 24 Aug 1969, *N.S.Probatova & V.P. Seledets 2255* (VLA).

Setaria glareosa Petrov

2*n* = 18, CHN. Russia, Far East, Khabarovskii Krai, Poliny Ossipenko Raion, Berëzovyi settlement, 24 Jul 2013, *L.A. Antonova 13118* (VLA).

Setaria maximowiczii Tzvelev & Prob.

2*n* = 18, CHN. Russia, Far East, Primorskii Krai, Dal'nerechenskii Raion, 3 km E of Vagutan settlement, on the railway embankment, 6 Sep 2010, *V.T. Lapenko 11684* (VLA).

Setaria viridis var. *breviseta* (Döll) Hitchc.

2*n* = 18, CHN. Russia, Far East, Primorskii Krai, Mikhailovskii Raion, Novoshakhtinskii settlement, the railway station Ozërnaya Pad', on the railway embankment, 25 Sep 2013, *V.T. Lapenko 12448* (VLA).

PRIMULACEAE

Primula farinosa L.

2*n* = 18, CHN. Russia, Far East, Primorskii Krai, Dal'negorskii Raion, near Dal'negorsk town, Mt. Sakharnaya, rocky slope in the upper part of the mountain, 15 Sep 1985, *N.S. Probatova & V.P. Seledets 6591* (VLA).

ROSACEAE

Agrimonia striata Michx.

2*n* = 56, CHN. Russia, Far East, Primorskii Krai, Peter the Great Bay, Russkii Island, Shigino, forest slope, 22 Aug 2011, *E.G. Rudyka 11883* (VLA).

Filipendula ulmaria (L.) Maxim.

2*n* = 14, 16, CHN. Russia, West Siberia, Novosibirskaya Oblast', 30 km W of Novosibirsk city, in vicinity of the railway station Repëvo, the *Betula* forest edge with *Origanum* and *Fragaria*, 5 Jul 2012, *V.N. Kapustina 12985* (VLA).

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* First chromosome count for the species.

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

▼ First chromosome count from an Indian accession.

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ASTERACEAE

***Centaurea nigra* L.

n = 11, CHN. India, Rajasthan, Nakki lake, Mount Abu, 24°35′40.24″N, 72°42′22.43″E, on hill slopes, 1220 m, 12 Dec 2013, *Ramanpreet 33684* (PUN 60897) [Fig. 6A].

The present chromosome count differs from the earlier report of 2*n* = 44 (Kapoor & al., 1987).

▼*Launaea fragilis* (Asso) Pau

n = 8, CHN. India, Rajasthan, Bikaner, on sand dunes, 28°00′30.48″N, 73°17′10.79″E, 242 m, 8 Mar 2016, *Ramanpreet 33684* (PUN 59874) [Fig. 6B].

This count agrees with the report of *n* = 8 by Kamel (2004) from Egypt.

▼*Pulicaria rajputanae* Blatt. & Hollb

n = 9, CHN. India Rajasthan, Pali, dry sandy area, 25°46′05.75″N, 73°19′14.87″E, 207 m, 23 Mar 2016, *Ramanpreet 33616* (PUN 59905) [Fig. 6D].

Sclerocarpus africanus Jacq. ex Murray

n = 18, CHN. India, Rajasthan, Pali, Ranakpur, on moist land, 25°06′57.75″N, 73°28′21.10″E, 436 m, 15 Sep 2014, *Ramanpreet 33601* (PUN 59891) [Fig. 6E].

The present chromosome count differs from the earlier report of 2*n* = 44 by Gill & Omoigui (1988) and agrees with that of 2*n* = 36 by Husaini & Iwo (1990).

***Sonchus oleraceus* L.

n = 24, CHN. India, Rajasthan, Sri Ganganagar, 29°27′36.89″N, 73°30′24.93″E, 178 m, 2 Mar 2013, *Ramanpreet 31140* (PUN 59470) [Fig. 6C].

The present count differs from the earlier reports of 2*n* = 18 (Sharma, 1970), 2*n* = 32 (Gupta & Gill, 1989), 2*n* = 36 (Gupta & al., 1989), and 2*n* = 64 (Hiremath & Chennaveeraiah, 1985).

BORAGINACEAE

***Arnebia hispidissima* (Lehm.) A.DC.

n = 8, CHN. India, Rajasthan, Jodhpur, Bhagatki Kothi, 26°15′01.68″N, 73°00′22.49″E, 241 m, 15 Sep 2015, *Ramanpreet 31146* (PUN 59873) [Fig. 6F].

The present chromosome count differs from the earlier report of 2*n* = 8 by Baquar & Husain (1967).

▼*Heliotropium bacciferum* Forssk.

n = 22, CHN. India, Rajasthan, Jodhpur, near Luni, 25°59′09.99″N, 73°00′15.68″E, 207 m, 26 Sep 2014, *Ramanpreet 31193* (PUN 59884) [Fig. 6G].

Current report agrees with the earlier report given by Malik & Ahmad (1963) from Pakistan.

▼*Heliotropium rariflorum* Stocks

n = 24, CHN. India, Rajasthan, Pali, on dry land, 25°45′59.25″N, 73°19′35.88″E, 207 m, 26 Sep 2014, *Ramanpreet 31171* (PUN 59919) [Fig. 6H].

Current report agrees with the earlier report given by Faruqi (1961) from Pakistan.

▼*Heliotropium subulatum* Hochst. ex DC.

n = 28, CHN. India Rajasthan, Pali, Hemawas, 25°41′02.72″N, 73°20′26.57″E, 207 m, 24 Sep 2014, *Ramanpreet 31166* (PUN 59485) [Fig. 6I].

Current report agrees with the earlier report given by Faruqi (1961) from Pakistan.

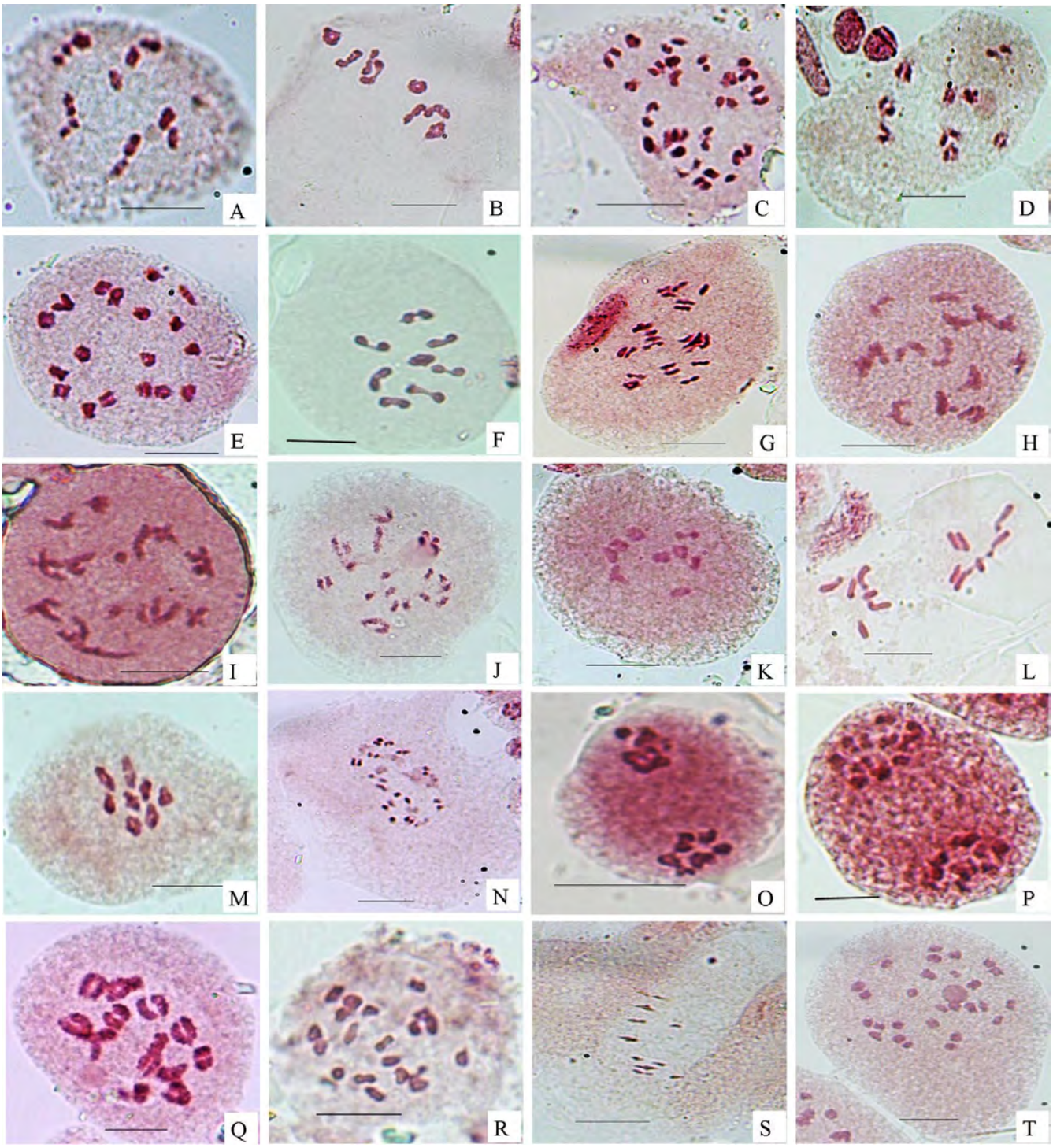

Fig. 6. A, *Centaurea nigra*, meiotic metaphase I, *n* = 11, (PUN 60897); **B,** *Launaea fragilis*, meiotic metaphase I, *n* = 8, (PUN 59874); **C,** *Sonchus oleraceus*, meiotic metaphase I, *n* = 24, (PUN 59470); **D,** *Pulicaria rajputanae*, meiotic diakinesis, *n* = 9, (PUN 59905); **E,** *Sclerocarpus africanus*, meiotic metaphase I, *n* = 18, (PUN 59891); **F,** *Arnebia hispidissima*, meiotic metaphase I, *n* = 8, (PUN 59873); **G,** *Heliotropium bacciferum*, meiotic metaphase I, *n* = 22, (PUN 59884); **H,** *Heliotropium rariflorum*, meiotic metaphase I, *n* = 24, (PUN 59919); **I,** *Heliotropium subulatum*, meiotic diakinesis, *n* = 28, (PUN 59485); **J,** *Convolvulus glomeratus*, meiotic metaphase I, *n* = 14 (PUN 59915); **K,** *Convolvulus desertii*, meiotic metaphase I, *n* = 9, (PUN 60868); **L,** *Merremia umbellata*, meiotic anaphase I, *n* = 7, (PUN 60883); **M,** *Spigelia anthelmia*, meiotic metaphase I, *n* = 8, (PUN 59920); **N,** *Lavandula multifida*, meiotic diakinesis, *n* = 11, (PUN 59497); **O,** *Leucas urticifolia*, meiotic anaphase I, *n* = 7, (PUN 59897); **P,** *Orthosiphon stamineus*, meiotic anaphase I, *n* = 12, (PUN 59916); **Q,** *Orobanche cernua*, meiotic metaphase I, *n* = 12, (PUN 59487); **R,** *Striga gesnerioides*, meiotic metaphase I, *n* = 20, (PUN 59487); **S,** *Dyerophytum indicum*, meiotic metaphase I, *n* = 7, (PUN 60852); **T,** *Borreria articularis*, meiotic diakinesis, *n* = 18, (PUN 59475).

CONVOLVULACEAE

**Convolvulus deserti* Hochst. & Steud. ex Steud.

n = 9, India, Rajasthan, Jhalawar, near waste places, 24°35′50.46″N, 76°09′39.54″E, 312 m, 15 Feb 2014, *Ramanpreet 31688* (PUN 60868) [Fig. 6K].

▼*Convolvulus glomeratus* Choisy

n = 14, CHN. India, Rajasthan, Udaipur, Gulab Bagh, 24°34′31.08″N, 73°41′37.30″E, 600 m, 12 Sep 2014, *Ramanpreet 33627* (PUN 59915) [Fig. 6J].

Current report agrees with the earlier report given by Saeed & al. (1990) from Pakistan.

**Merremia umbellata* (L.) Hallier f.

n = 7; India, Rajasthan, Udaipur, Sahelion Ki Bari, near moist places, 24°36′11.01″N, 73°41′09.77″E, 598 m, 10 Sep 2014, *Ramanpreet 31690* (PUN 60883) [Fig. 6L].

LAMIACEAE

▼*Lavandula multifida* L.

n = 11, India, Rajasthan, Udaipur, Fateh Sagar Lake, 24°36′05.04″N, 73°40′27.20″E, 578 m, 10 Sep 2014, *Ramanpreet 31181* (PUN 59497) [Fig. 6N].

Current report agrees with the earlier report given by Peruzzi (2004) from Italy.

***Leucas urticifolia* (Vahl) Sm.

n = 7, India, Rajasthan, Jahlawar, Bheemsagar Dam, 24°33′24.98″N, 76°19′57.73″E, 312 m, 13 Feb 2013, *Ramanpreet 33607* (PUN 59897) [Fig. 6O].

The present chromosome count differs from the earlier report of 2*n* = 28by Kishnappa & Basavaraj (1982).

▼*Orthosiphon stamineus* Benth.

n = 12, India, Rajasthan, Pali, Ranakpur, on hilly slopes, 25°06′56.64″N, 73°28′18.55″E, 436 m, 15 Sep 2014, *Ramanpreet 33628* (PUN 59916) [Fig. 6P].

The present chromosome count differs from the earlier report of 2*n* = 48 by Cherian & Kuriachan (1984) from outside of India.

LOGANIACEAE

▼*Spigelia anthelmia* L.

n = 8; India, Rajasthan, Jhalawar, near moist places, 24°35′50.46″N, 76°09′39.54″E, 312 m, 15 Feb 2014, *Ramanpreet 33611* (PUN 59920) [Fig. 6M].

The present chromosome count differs from the earlier report of 2*n* = 32 by Cave (1963).

OROBANCHACEAE

▼*Orobanche cernua* Loefl.

n = 12, India, Rajasthan, Jaisalmer, on sand dunes, 26°54′58.36″N, 70°56′27.37″E, 225 m, 16 Mar 2015, *Ramanpreet 31176* (PUN 59487) [Fig. 6Q].

The present chromosome count differs from the earlier report of 2*n* = 48 by Moore (1982) from Europe.

▼ *Striga gesnerioides* (Willd.) Vatke

n = 20, India, Rajasthan, Udaipur, Fateh Sagar Lake, 24°36′05.04″N, 73°40′27.20″E, 578 m, 9 Sep 2014, *Ramanpreet 33604* (PUN 59894) [Fig. 6R].

Current report agrees with the earlier report given by Iwo & al. (1993).

PLUMBAGINACEAE

**Dyerophytum indicum* Kuntze

n = 7, India, Rajasthan, Mount Abu, Guru Shikar, 24°38′54.41″N, 72°47′28.01″E, 1722 m, 12 Dec 2013, *Ramanpreet 31128* (PUN 60852) [Fig. 6S].

RUBIACEAE

***Borreria articularis* (L.) F.N.Williams

n = 18, India, Rajasthan, Pali, Ranakpur, 25°06′56.64″N, 73°28′18.55″E, 436 m, 9 Sep 2015, *Ramanpreet 31150* (PUN 59475) [Fig. 6T].

The present chromosome count differs from the earlier report of 2*n* = 64 by Shivkumar & Chennaveeraiah (1983).

SCROPHULARIACEAE

▼*Scrophularia smithii* Hornem.

n = 20, India, Rajasthan, Mount Abu, Achalgarh, along roadsides, 24°35′53.67″N, 72°43′59.48″E, 1220 m, 12 Dec 2012, *Ramanpreet 33696* (PUN 60877) [Fig. 7A].

The present chromosome count differs from the earlier report of 2*n* = 60 by Vaarama & Leikas (1970).

SOLANACEAE

***Solanum seaforthianum* Andrews

n = 24, India, Rajasthan, Mount Abu, on hilly slopes, 24°35′33.38″N, 72°42′56.36″E, 1220 m, 12 Dec 2013, *Ramanpreet 31118* (PUN 59192) [Fig. 7B].

The present chromosome count differs from the earlier report of 2*n* = 24 by Madhavadian (1968).

VERBENACEAE

**Bouchea marrubifolia* (Fenzl ex Walp.) Schauer

n = 20, India, Rajasthan, Churu, on sand dunes, 28°19′02.99″N, 74°59′06.60″E, 292 m, 28 Sep 2013, *Ramanpreet 33688* (PUN 60851) [Fig. 7C].

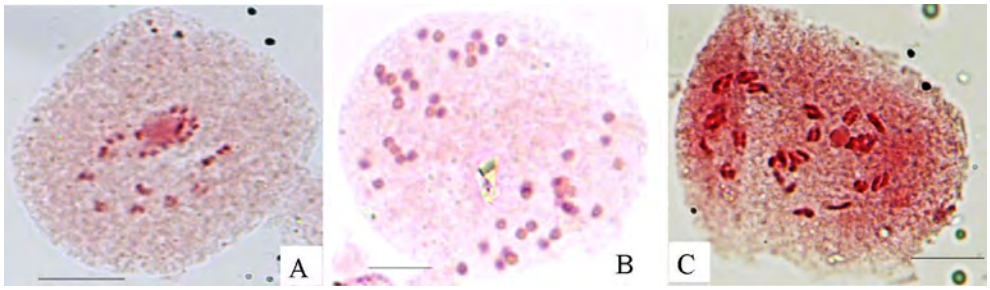

Fig. 7. A, *Scrophularia smithii*, meiotic diakinesis, *n* = 20, (PUN 60877); **B,** *Solanum seaforthianum*, meiotic anaphase I, *n* = 24, (PUN 59192); **C,** *Bouchea marrubifolia*, meiotic diakinesis, *n* = 20, (PUN 60851).

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Methods are described in Schweizer (1976), Hojsgaard & al. (2009) and Rivarola Sena & al. (2013).

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POACEAE

Paspalum lilloi Hack.

$n = 10$, $2n = 2x = 20$, CHN. Argentina, Misiones, Iguazú, Iguazú National Park, 17 Dec 2013, *E.J. Martínez 3* (CTES, MNES); 12 Jan 1994, *G.H. Rua 127* (BAA) (Fig. 8A–D).

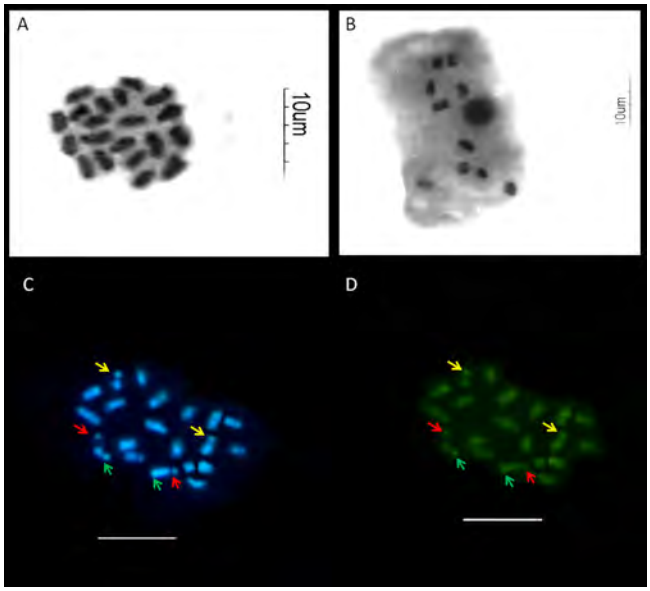

Fig. 8. *Paspalum lilloi*. **A,** Mitotic metaphase, $2n = 20$ chromosomes. **B,** PMC at diakinesis with 10 bivalents and a persistent nucleolus. **C & D,** Mitotic cell with $2n = 20$ chromosomes, staining with CMA/DA/DAPI: **C,** DAPI staining; **D,** CMA/DA staining. Red arrows indicate CMA+/DAPI⁰ microsatellites, yellow arrows shows CMA+/DAPI+ microsatellites and green arrows point to CMA+/DAPI-heterochromatin blocks. — Scale bars = 10 µm.

Paspalum lilloi Hack. is an endemic species from Iguazú Falls. Karyomorphometric analyses and meiotic behaviour description are presented for the first time for the species. It showed unimodal and symmetrical karyotype (1A according to Stebbins's categories, 1971), comprising 20 metacentric chromosomes (Fig. 8A) whose length is ranging from 2.8 to 1.6 µm, and 22.69 µm per haploid genome. Chromosomes behave regularly at meiosis, with mainly 20II at diakinesis and also 9II+2I, 8II+4I, 7II+6I, 6II+8I (Fig. 8B). At diakinesis and metaphase I, the mean frequency of I was 3.085±0.358 per pollen mother cell (PMC) and 8.457±0.209 II per PMC.

Tri-staining with CMA/Distamycin-A/DAPI fluorochromes revealed the presence of two pairs of bands localized on two microsatellites, in pair 3 and 9, respectively. Chromosomes were arranged, according to the total chromosome length. The microsatellite of the short arm on pair 3 was GC- rich (CMA+/DAPI0), and a GC-rich (CMA+) terminal band on the long arm of these chromosomes was detected. The pair 9 showed an AT-rich band as well as a GC-rich (CMA+/DAPI+) microsatellites, both localized on the short arm (Fig. 8C, D).

Karyotype, and heterochromatin pattern are presented for the first time for the species.

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* First chromosome count for the species.

§ Species with intra-specific variation (cytotypes). The chromosome numbers here obtained are different for other authors (Forni-Martins & Martins, 2000; Costa & Forni-Martins, 2006; Costa, 2009, Silveira & al., 2016)

$ The chromosome numbers here obtained agree with records for other authors (Costa & Forni-Martins, 2006; Costa & al., 2008; Costa, 2009; Silveira & al., 2016)

Sympatric cytotypes in a population.

Methods for chromosome counts follow Guerra (1988).

MYRTACEAE

§ *Eugenia aurata* O.Berg

2*n* = 44, CHN. Brazil, São Paulo, Mogi Guaçu, 22.3708° S, 46.9378° W, 14 Sep 2002, *I.R. Costa 429* (UEC) [Fig. 9A].

$ *Eugenia brasiliensis* Lam.

2*n* = 22, CHN. Brazil, São Paulo, Itirapina, 22.8077° S, 47.0761° W, 20 Sep 2003, *I.R. Costa 483* (UEC) [Fig. 9B].

* *Eugenia cerasiflora* Miq.

2*n* = 22, CHN. Brazil, São Paulo, Parque Estadual Carlos Botelho, Sete Barras, 24.3800° S, 47.9200° W, 13 Dec 2013, *I.R. Costa 513* (UEC) [Fig. 9C].

§ *Eugenia dysenterica* DC.

2*n* = 22, CHN. Brazil, Brasília, Jardim Botânico, 15.7652° S, 47.8697° W, 10 Oct 2004, *I.R. Costa 525* (UEC) [Fig. 9D].

2*n* = 33, CHN. Brazil. Minas Gerais, Serra do Cipó, 19.6272° S, 43.8897° W, 25 Sep 2002, *I.R. Costa 455* (UEC).

$§ *Eugenia hyemalis* Cambess.

2*n* = 22, CHN. Brazil, São Paulo, Atibaia, 23.1100° S, 46.5500° W, 24 Aug 2002, *I.R. Costa 426* (UEC).

2*n* = 44, CHN. Brazil, Minas Gerais, Serra do Cipó, 19.3430° S, 43.5875° W, 26 Sep 2002, *I.R. Costa 442* (UEC).

$ *Eugenia involucrata* DC.

2*n* = 22, CHN. Brazil, São Paulo, Campinas, 22.8077° S, 47.0761° W, 3 Sep 2002, *I.R. Costa 434* (UEC) [Fig. 9E].

$§ *Eugenia klotzschiana* O.Berg

2*n* = 22, CHN. Brazil, Brasília, 15.8947° S, 47.8526° W, 13 Dec 2005, *I.R. Costa 637* (UEC) [Fig. 9F].

2*n* = 33, CHN. Brazil, São Paulo, Itirapina, 22.2348° S, 47.8182° W, *I.R. Costa 509* (UEC).

§ *Eugenia mosenii* (Kausel) Sobral

2*n* = 44, CHN. Brazil, São Paulo, Sete Barras, 24.3800° S, 47.9200° W, 13 Dec 2003, *I.R. Costa 512* (UEC) [Fig. 9G].

$ *Eugenia multicostata* D.Legrand

2*n* = 22, CHN. Brazil, São Paulo, Sete Barras, 24.3800° S, 47.9200° W, 13 Dec 2003, *I.R. Costa 519* (UEC) [Fig. 9H].

$§ *Eugenia pitanga* (O.Berg) Kiaersk.

2*n* = 22, CHN. Brazil, São Paulo, Assis, 22.5992° S, 50.3859° W, 10 Oct 2003, *I.R. Costa 503* (UEC).

2*n* = 44, CHN. Brazil, São Paulo, Mogi Guaçu, 22.3708° S, 46.9378° W, 25 Oct 2002, *I.R. Costa 459* (UEC) [Fig. 9J].

$§# *Eugenia punicifolia* (Kunth) DC.

2*n* = 22, CHN. Brazil, Minas Gerais, Serra do Cipó, 25 Sep 2002, 19.5136° S, 43.7450° W, 25 Sep 2002, *I.R. Costa 454* (UEC) [Fig.

9L]; Brazil, São Paulo, Itirapina, 47.8200° S, 22.8430° W, 8 Nov 2003, *I.R. Costa 492* (UEC).

2*n* = 33, CHN. Brazil, Minas Gerais, Serra do Cabral, 17.8867° S, 44.5775° W, *C F. Verola 136* (EAC) [Fig. 9M]; Brazil, Bahia, Brejinho das Ametistas, 14.0802° S, 42.4936° W, 15 Apr 2007, *I.R. Costa 759* (EAC); Brazil, Ceará, Crateús, 5.1783° S, 40.6775° W, 7 May 2003, *J.R. Lima 63* (EAC); Brazil, São Paulo, Assis, 22.6616° S, 50.4122° W, 7 Feb 2006, *I.R. Costa 648* (UEC).

2*n* = 44, CHN. Brazil, Bahia, Rio de Contas, 13.5567° S, 41.8431° W, 16 Apr 2007, *I.R. Costa 760* (EAC) [Fig. 9N]; Brazil, Minas Gerais, Serra do Cipó, Cardeal Mota, 18.1881° S, 43.5224° W, 27 Apr 2006, *I.R. Costa 701* (UEC); Brazil, Bahia, Brejinho das Esmeraldas, 15.1140° S, 42.4936° W, 15 Apr 2007, *I.R. Costa 755* (EAC) [Fig. 9O].

$§# *Eugenia pyriformis* Cambess.

2*n* = 22, CHN. Brazil, São Paulo, Itirapina, 22.2348° S, 47.8182° W, 18 Nov 2003 *I.R. Costa 491* (UEC).

2*n* = 33, CHN. Brazil, São Paulo, Itirapina, 22.2348° S, 47.8182° W, 16 Oct 2003, *I.R. Costa 508* (UEC) [Fig. 9K].

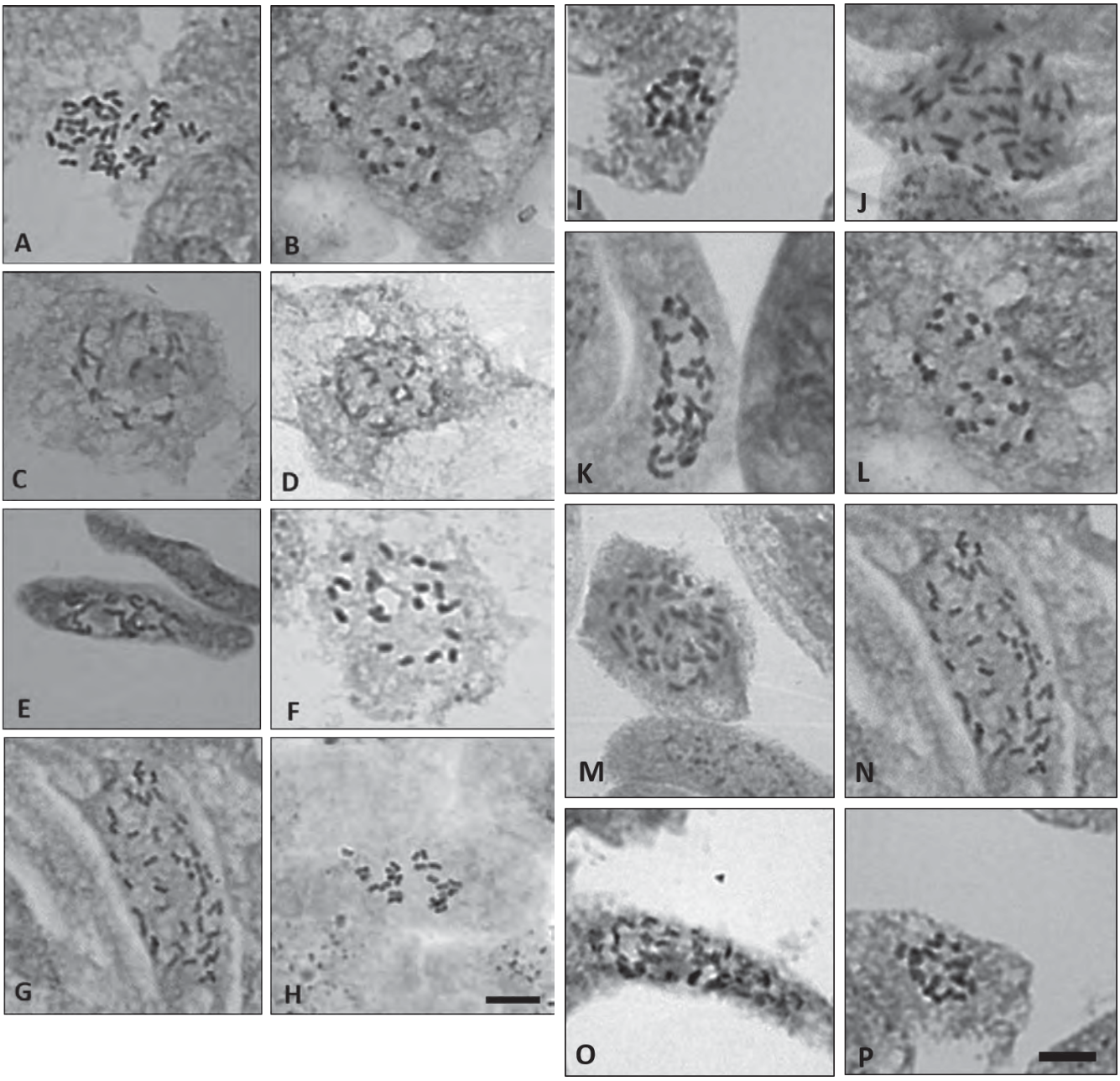

Fig. 9. Mitotic metaphases of *Eugenia* species. **A,** *E. aurata*, 2*n* = 44; **B,** *E. brasiliensis*, 2*n* = 22; **C,** *E. cerasiflora*, 2*n* = 22; **D,** *E. dysenterica*, 2*n* = 22; **E,** *E. involucrata*, 2*n* = 22; **F,** *E. klotzchiana*, 2*n* = 22; **G,** *E. mosenii*, 2*n* = 44; **H,** *E. multicostata*, 2*n* = 22; **I,** *E. stictopetala*, 2*n* = 22; **J,** *E. pitanga*, 2*n* = 44; **K,** *E. pyriformis*, 2*n* = 33; **L,** *E. punicifolia*, 2*n* = 22; **M,** *E. punicifolia*, 2*n* = 33; **N,** *E. punicifolia*, 2*n* = 44; **O,** *E. punicifolia*, 2*n* = 44; **P,** *E. uniflora*, 2*n* = 22. — Scale bars = 5 µm.

**Eugenia stictopetala* DC.

2*n* = 22, CHN. Brazil, Ceará, Serra das Almas, 5.1466° S, 40.9279° W, 25 May 2005, *R.C. Costa s.n.* (EAC 35131) [Fig. 9I].

$ *Eugenia uniflora* L.

2*n* = 22, CHN. Brazil, São Paulo, Campinas, 22.7873° S, 47.0731° W, 16 Aug 2002, *I.R. Costa 420* (UEC); Brazil, São Paulo, Campinas, 22.8241° S, 47.0788° W, 16 Aug 2002, *I.R. Costa 422* (UEC); Brazil, Rio de Janeiro, Maricá, 22.9269° S, 42.8109° W, 24 Jul 2005, *I.R. Costa 603* (UEC) [Fig. 9P].

Eugenia L. is the largest genus of Neotropical Myrtaceae Juss., comprising ca. 1050 species (WCSP, 2017), distributed from southern Mexico, Cuba and the Antilles to Uruguay and Argentina, with ca. 120 species in Africa, and smaller representation in Southeast Asia and the Pacific (ca. 71 spp.) (Snow, 2011; Wilson, 2011). Brazil is the center of *Eugenia* diversity, containing ca. 384 taxa of which 297 are endemic (Brazil Flora G, 2014) occurring in all phytogeographic domains and presenting important role in the structure of plant communities (Nascimento & al., 2001).

The genus consists of shrubs or trees, with 4–6-merous flowers, the calyx open or closed in the bud, a 2-locular ovary, 2 to numerous ovules, the fruit crowned by the calyx-lobes or by a circular scar, 1–2 seeds, seed coat membranous or crusty and the embryo as a solid mass (Landrum & Kawasaki, 1997; Holst & al., 2003).

To date, only 33 of ca. a thousand species of *Eugenia* have chromosome numbers determined (Forni-Martins & Martins, 2000; Costa & Forni-Martins, 2006; Costa & al., 2008; Costa, 2009; Silveira & al., 2016). Silveira & al. (2016) have studied the number/ploidy level of 14 species of *Eugenia* and have concluded that polyploidy is very frequent in the genus and that polyploid individuals are usually found at higher altitudes and under stressfull environmental conditions (e.g., under-developed soils, large temperature variation, water scarcity and large level of radiation). The lack of cytogenetic information and the representation of genus in flora, make relevant the cytogenetic studies of their species. In this work, we analyzed the chromosome numbers of 22 populations pertaining to 14 species. For two of them our data represent the first records on chromosome numbers.

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* First chromosome count for the species.

** New cytotype for the species.

POACEAE

Mesosetum cayennense Steud.

* 2*n* = 20, CHN. Brazil, Goiás, Mineiros, sierra with rocky outcrops north of the BR-364 Hwy., 17°22′44.6″ S, 52°55′26.8″ W, 14 Apr 2012, *G.H. Rua & al. 940* (CEN, UB) [Fig. 10A–E].

Mesosetum ferrugineum (Trin.) Chase

* 2*n* = 60, CHN. Brazil, Distrito Federal, Brasília, Brasília National Park, 15°38′32.4″ S, 48°00′50.6″ W, 25 Jan 2013, *M.W.S. Sousa & D.M. Ramos 64* (UB) [Fig. 10F].

Mesosetum loliiforme (Hochst. ex Steud.) Chase

2*n* = 16, CHN. Brazil, Goiás, Cavalcante, grassland adjacent to the Cavalcante Airport, 13º46′42.5″ S, 47°24′50.5″ W, 17 Jan 2014, *J.F.M Valls & al. 15902* (CEN) [Fig. 11A].

2*n* = 16, CHN. Brazil, Goiás, Teresina de Goiás, 2.9 km from Teresina de Goiás on road to Cavalcante, 13º47′33.8″S, 47º17′20.7″W, 17 Jan 2014, *J.F.M Valls & al. 15896* (CEN) [Fig. 11B].

2*n* = 16, CHN. Brazil, Goiás, Teresina de Goiás, 13.5 km from Teresina de Goiás on the highway to Alto Paraíso, 13º51′39.2″S, 47º16′25.7″W, 17 Jan 2014, *J.F.M Valls & al. 15914* (CEN) [Fig. 11C].

**2*n* = 24, CHN. Brazil, Distrito Federal, Brasília, Brasília Botanical Garden, Cristo Redentor area, 15°55′15.0″S, 047°53′58.0″W, 15 Jan 2013, *M.W.S. Sousa & R.C. Oliveira 63* (UB) [Fig. 12A–F].

2*n* = 32, CHN. Brazil, Distrito Federal, Brasília, Água Limpa Farm, 15º56′41.0″S, 47°53′07.0″W, 15 Jan 2014, *M.W.S. Sousa & D.M. Ramos 66* (UB) [Fig. 11D].

Mesosetum rottboellioides (Kunth) Hitchc.

*2*n* = 20, CHN. Brazil, Minas Gerais, Grão Mogol, under bridge on river Itacambiruçu, after Grão Mogol intersection, on road to Cristália, 16º35′36.0″S, 42º54′01.4″W, 5 Jun 2013, *P.A. Reis & M.W.S. Sousa 331* (UB) [Fig. 13A, B].

Mesosetum sclerochloa (Trin.) Hitchc.

*2*n* = 16, CHN. Brazil, Goiás, Flores de Goiás, 9 km from bridge on river Paranã, on road to Nova Roma, 14º23′55.0″S, 47º03′01.0″W, 10 Feb 2013, *R.C. Oliveira & C.W. Fagg 2810* (UB) [Fig. 13C–F].

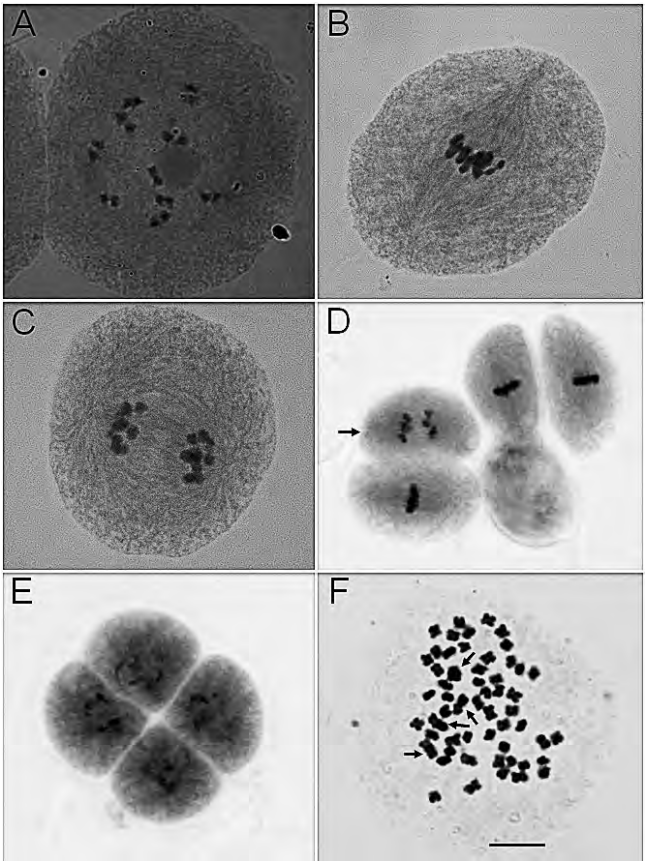

Fig. 10. Meiotic and mitotic cells of *Mesosetum* species. **A–E,** Meiotic cells of *Mesosetum cayennense* Steud. Accession with 2*n* = 20 chromosomes, *Rua & al. 940*: **A,** Diakinesis with 10 bivalents; **B,** Metaphase I; **C,** Anaphase I; **D,** Asynchronous division at metaphase II (arrow); **E,** Tetrad. **F,** Mitotic metaphase of *Mesosetum ferrugineum* (Trin.) Chase, *Sousa & Ramos 64*, with 2*n* = 60. Arrows indicate overlap of chromosomes. — Scale bar =10 µm

Methods

Meiotic and mitotic studies followed Pozzobon & al. (2013) with adjustments. Young inflorescences for meiotic studies were obtained from natural populations, at the time of the original herbarium and germplasm collection. They were fixed in ethanol : glacial acetic acid (3 : 1) for 24 h at environmental temperature, and stored in refrigerator in 70% ethanol until used for analysis. Microsporocyte slides were prepared by maceration and stained with 2% acetocarmine. The number of cells analyzed per plant in distinct meiotic phases ranged according to the availability of inflorescences collected from each plant. Meiotic indices were calculated according to Love (1951). For chromosome counting, in diakinesis or metaphase, at least five cells with good chromosome spreading were considered. Somatic chromosome numbers were obtained from root-tip cells of plants grown in a shaded greenhouse, pretreated for three hours in a 1-bromonaphtalene saturated solution, fixed in ethanol : glacial acetic acid (3 : 1) for 24 h at room temperature, and stored in refrigerator in 70% ethanol until used for analysis, hydrolyzed in Normal HCl at 60°C, and stained with Schiff reagent. Acetocarmine 2% was added during smearing. At least five cells, but usually over ten with good spreading and minimal chromosome overlapping, were analyzed from each individual plant.

Mesosetum Steud. is a neotropical genus comprising 25 species. By housing 22 of these species (Filgueiras & al., 2015; Silva & al., 2016), Brazil is assumed to be the center of distribution (Chase, 1911).

The genus has traditionally been considered a member of the tribe Paniceae R.Br. (Steudel, 1855; Chase, 1911; Swallen, 1937; Filgueiras, 1989). It was formally referred to the subfamily Panicoideae A.Br. (actually Panicoideae Asch.), tribe Paniceae, by Pilger (1954).

In phylogenetic studies by Giussani & al. (2001), based on DNA sequence data from the chloroplast gene *ndhF*, covering the subfamily Panicoideae, and later by Morrone & al. (2012), combining the same DNA sequences with morphological characters for an increasing

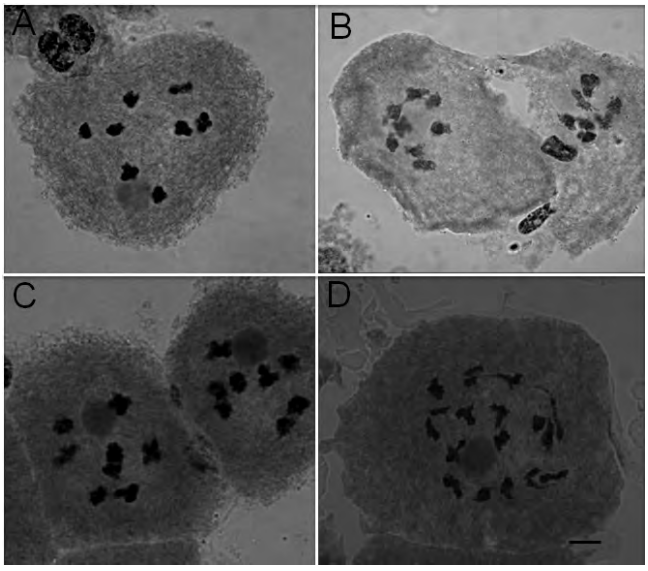

Fig. 11. Meiotic cells of *Mesosetum loliiforme* (Hochst. ex Steud) Chase. **A–C,** Accessions with 2*n* = 16 chromosomes: **A,** *Valls & al. 15902*, diakinesis with 8 bivalents; **B,** *Valls & al. 15896*, diakinesis with 8 bivalents, showing chromosome stickness; **C,** *Valls & al. 15914*, diakinesis with 8 bivalents; **D,** Accession with 2*n* = 32 chromosomes, *Sousa & Ramos 66*, diakinesis with chromosome stickness. — Scale bar = 10 µm.

number of genera of the tribe Paniceae s.l., *Mesosetum* was placed in a clade of mostly American genera with the basic chromosome number $x = 10$, for which Morrone & al. (2012) reinstated the tribe Paspaleae J.Presl. Despite this placement, no *Mesosetum* species was known, at the time, with a somatic number consistent with $x = 10$.

In fact, up to 2012, chromosome numbers reported for *Mesosetum* species, $2n = 16$ for *M. pittieri* Hitchc. (Gould, 1966; Pohl & Davidse, 1971; Davidse & Pohl, 1972) and *M. chaseae* Luces (Silva & al., 2012), as well as $2n = 16$ (Gould & Soderstrom, 1967) and $2n = 32$ (Sede & al., 2010) for *M. loliiforme*, would suggest a basic number $x = 8$, exceptional for New World members of Paspaleae.

Ribeiro & al. (2015) added complexity to the available data, by reporting $2n = 8$ for single accessions of *M. alatum* Filg., *M. annuum* Swallen, and *M. longiaristatum* Filg, and for three accessions representing geographically distant populations of *M. ansatum* (Trin.) Kuhlm. This established a rare basic chromosome number of $x = 4$ for *Mesosetum*, or at least for the species then analyzed, with counts of $2n = 8$, 16 and 32.

Our present results bring to light the somatic number of $2n = 16$ for *M. sclerochloa* (Trin.) Hitchc., add three counts of $2n = 16$ for *M. loliiforme*, besides a second count of $2n = 32$, as well as a new cytotype of $2n = 24$, documenting three ploidy levels for the latter. On the other hand, unprecedented chromosome counts of $2n = 20$ for *M. cayennense* and *M. rottboellioides*, and $2n = 60$ for *M. ferrugineum*, suggest that at least these three species share the $x = 10$ basic number, characteristic of the reinstated tribe Paspaleae.

Although plants with $2n = 20$ could be pentaploids derived of $x = 4$, the meiotic behavior observed in *M. cayennense* and *M. rottboellioides* pollen mother cells is characteristic of diploids based on $x = 10$, showing 10 bivalents and normal metaphases and anaphases (Figs. 10A–E, 13A, B), as well as 100% regularity in almost all phases of meiosis (Table 2). A few irregularities eventually detected in metaphase II (*M. cayennense*) or telophase II (*M. rottboellioides*) did not compromise the successful completion of meiosis, as demonstrated by their respective meiotic indices of 100% (Table 2).

The meiotic behavior of *M. ferrugineum* ($2n = 60$) is still unknown. But, its morphological similarity to *M. cayennense* and *M. rottboellioides* (Filgueiras, 1989) suggests it shares the basic number $x = 10$, at the hexaploid level (Fig. 10F).

Cytogenetic information compiled so far implies the coexistence of two basic chromosome numbers in the genus *Mesosetum*, in which *M. cayennense*, the type, *M. ferrugineum* and *M. rottboellioides* are the only three species accepted by Filgueiras (1989) in his strict circumscription of the typical sect. *Mesosetum*. This means that the most typical species of the genus are well accommodated in the $x = 10$ clade, and consequently in the tribe Paspaleae.

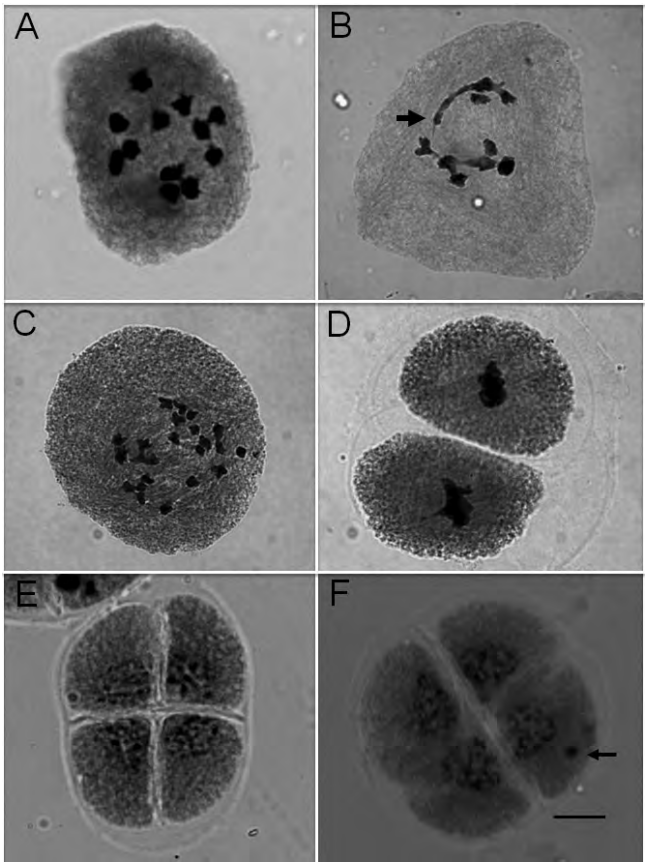

Fig. 12. Meiotic cells of *Mesosetum loliiforme* (Hochst. ex Steud.) Chase. Accession with $2n = 24$ chromosomes, *Sousa & Oliveira 63*. **A,** Diakinesis with 12 bivalents; **B,** Diakinesis with chromosome stickness (arrow); **C,** Anaphase I; **D,** Metaphase II; **E,** Tetrad; **F,** Tetrad with micronucleus (arrow). — Scale bar = 10 µm.

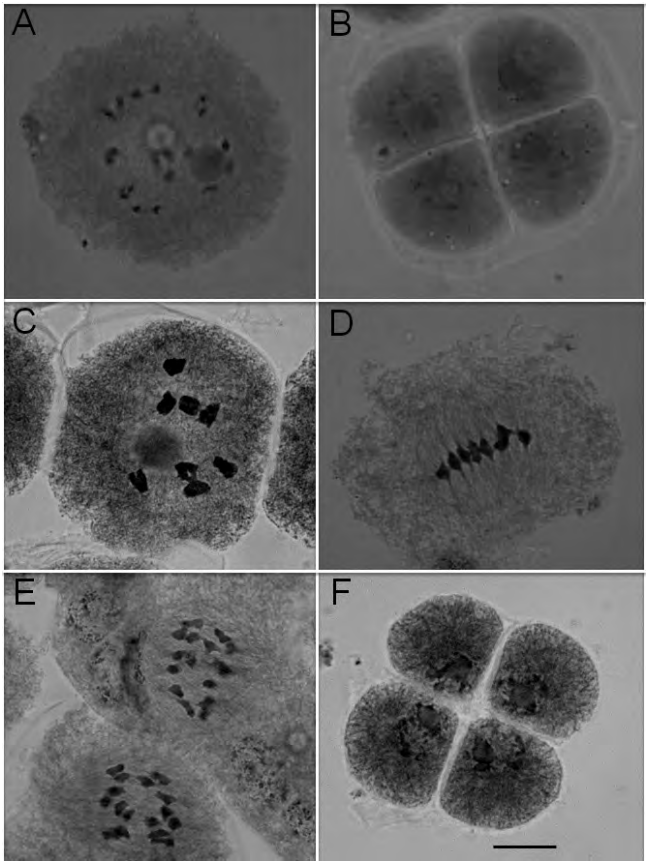

Fig. 13. Meiotic cells of *Mesosetum* species. **A & B,** Meiotic cells of *Mesosetum rottboellioides* (Kunth) Hitchc. Accession with $2n = 20$ chromosomes, *Reis & Sousa 331*: **A,** Diakinesis with 10 bivalents; **B,** Tetrad. **C–F,** Meiotic cells of *Mesosetum sclerochloa* (Trin.) Hitchc. Accession with $2n = 16$ chromosomes, *Oliveira & Fagg 2810*: **C,** Diakinesis with 8 bivalents; **D,** Metaphase I; **E,** Anaphase I; **F,** Tetrad. — Scale bar = 10 µm.

Table 2. Percentage of meiotic abnormalities and meiotic index in four Brazilian species of *Mesosetum*. With three ploidy levels, *M. loliiforme* is represented by a 2*n* = 24 cytotype.

	M. cayennense		*M. rottboellioides*		*M. sclerochloa*		*M. loliiforme*	
	2*n* = 20		2*n* = 20		2*n* = 16		2*n* = 24	
Meiotic phases	No PMCs*	% Irreg.*	No PMCs	% Irreg.	No PMCs	% Irreg.	No PMCs	% Irreg.
Diakinesis	262	0.0	250	0.0	200	0.0	200	25.0
Metaphase I	218	0.0	210	0.0	214	0.0	200	15.0
Anaphase I	236	0.0	200	0.0	200	25.0	200	15.0
Telophase I	200	0.0	210	0.0	200	0.0	200	5.0
Prophase II	200	0.0	200	0.0	200	0.0	200	7.5
Metaphase II	250	6.0	–	–	200	6.0	200	0.0
Anaphase II	200	0.0	–	–	200	0.0	–	–
Telophase II	200	0.0	200	0.5	200	0.0	200	15.0
Tetrad	210	0.0	210	0.0	200	0.0	150	33.33
Total cells	**1976**	**–**	**1480**	**–**	**1814**	**–**	**1550**	**–**
% Irregularity	**–**	**0.75**	**–**	**0.067**	**–**	**3.41**	**–**	**13.85**
Meiotic Index (%)	**–**	**100**	**–**	**100**	**–**	**100**	**–**	**66.67**

* PMCs = Pollen mother cells (microsporocytes)

However, it is noteworthy that in the phylogenetic studies by Giussani & al. (2001) and Morrone & al. (2012), which nest *Mesosetum* in the *x* = 10 clade, the genus has been represented by a single accession of *M. chaseae* (*Zuloaga 6945* from Palmeiras, Bahia State, Brazil, for which no chromosome information is available), a species with 2*n* = 16, counted from 10 distinct accessions (Silva & al., 2012), which fits in the group of species compatible with a basic chromosome number *x* = 4.

So far, species with *x* = 10 have been found at the diploid and hexaploid levels (2*n* = 20, 60), while those based on *x* = 4 show the diploid, tetraploid, hexaploid and octoploid levels (2*n* = 8, 16, 24, 32).

Meiotic behavior of *M. sclerochloa*, with 2*n* = 16, is quite normal, showing 8 bivalents in diakinesis (Fig. 13C–F). Irregularities were recorded only in anaphase I, and there is no evidence of impaired fertility, as the meiotic index reaches 100% (Table 2). Possibly based on *x* = 4, this accession's meiotic behavior suggests the achievement of genetic control of chromosome pairing at the tetraploid level.

Mesosetum loliiforme is a widespread tropical American grass. Filgueiras (1989) characterized it as a species with wide morphological variation restricted to the vegetative organs, and taking into account the uniformity of the reproductive structures, placed nine heterotypic synonyms under this name.

Cytological data compiled from accessions native to Central Brazil provides evidence of a polyploid series, but no information is available about the reproductive strategies prevailing at each ploidy level.

The three accessions of *M. loliiforme* with 2*n* = 16 showed diakinesis with 8 bivalents (Fig. 11A–C), eventually showing some chromosome stickness (Fig. 11B). Possibly based on *x* = 4, this meiotic configuration suggests, as for *M. chaseae*, the achievement of genetic control of chromosome pairing at the tetraploid level.

Meiotic analysis was undertaken on the *M. loliiforme* accession with 2*n* = 24, which presented a 66.67% meiotic index (Table 2). Diakinesis with 12 bivalents occurred (Fig. 12A), and other phases appeared normal (Fig. 12C–E), but irregularities, such as chromosome stickness (Fig. 12B), multiple associations, delayed chromosomes, asynchronous divisions, and tetrads with micronuclei (Fig. 12F) were observed in meiosis I and II nearing 14% of the cells.

The Brazilian accession with 2*n* = 32, potentially an octoploid based on *x* = 4, showed diakinesis generally with 16 bivalents, with more evident stickness (Fig. 11D). Instability was noted in its divisions, including a tendency to form tetravalents and other multiple associations, as found in the 2*n* = 24 population. Sede & al. (2010) reported 16 II for a Venezuelan accession sharing the 2*n* = 32 somatic number. Even if partial, such apparently normal behavior at a high level of ploidy may be indicative of allopolyploid origin of distinct cytotypes of *M. loliiforme*.

Taking into account the present cytological findings, the circumscription of *M. loliiforme* deserves reevaluation, including the cytological analysis of additional populations, especially from the Brazilian States of Maranhão and Rio Grande do Norte, from where five species of *Mesosetum* described by Swallen (1937) were later transferred to the synonymy of *M. loliiforme* by Filgueiras (1989).

This work stresses the importance of cytogenetic studies to understanding the existing diversity in *Mesosetum*.

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Methods for chromosome analysis are according to Guerra & Souza (2002).

* First chromosome count for the genus.
** First chromosome count for the species.

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ORCHIDACEAE
Subtribe: Laeliinae

***Brassavola ceboletta* Rchb.f.

2*n* = 40, CHN. Brazil, Bahia, Ilhéus, 14°47′20″S, 39°02′58″W, 13 Jan 2011, *L.P. Felix 13253* (EAN) [Fig. 14A].

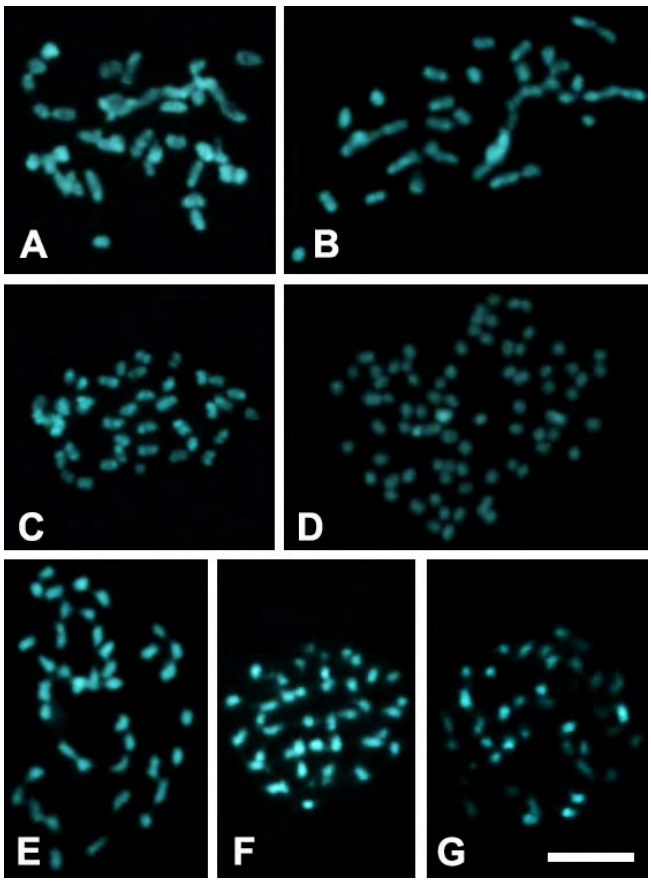

Fig. 14. A, *Brassavola ceboletta*, 2*n* = 40; **B,** *Brassavola tuberculata*, 2*n* = 40; **C,** *Laelia marginata*, 2*n* = 40; **D,** *Prosthechea faresiana*, 2*n* = 80; **E,** *Prosthechea fragrans*, 2*n* = 40; **F,** *Scaphyglottis fusiformis*, 2*n* = 40; **G,** *Scaphyglottis sickii*, 2*n* = 40. — Scale bar = 5 µm.

Brassavola tuberculata Hook.

2*n* = 40, CHN. Brazil, Paraíba, Puxinanã, 07°09′40″S, 35°57′38″W, 18 May 2006, *L.P. Felix 12728* (EAN) [Fig. 14B].

***Cattleya aclandiae* Lindl.

2*n* = 40, CHN. Brazil, Bahia, Itabuna, 14°47′08″S, 30°16′49″W, 11 Oct 2013, *L.P. Felix 14498* (EAN) [Fig. 15A].

***Cattleya cernua* (Lindl.) Van den Berg

2*n* = 40, CHN. Brazil, Peruíbe, SP, 24°10′25″S, 46°58′07″W, 5 Apr 2009, *L.P. Felix 12859* (EAN) [Fig. 15B].

***Cattleya crispata* (Thunb.) Van den Berg

2*n* = 80, CHN. Brazil, Minas Gerais, Diamantina, 17°56′07″S, 43°36′46″W, 2 Feb 2015, *L.P. Felix 15372* (EAN) [Fig. 15C].

Cattleya elongata Barb.Rodr.

2*n* = 80, CHN. Brazil, Bahia, Ibicoara, 13°26′04″S, 41°12′41″W, 24 Jan 2014, *L.P. Felix 14559* (EAN) [Fig. 15D].

***Cattleya grandis* (Lindl. & Paxton) A.A.Chadwick

2*n* = 40, CHN. Brazil, Bahia, Itatim, 12°45′38″S, 39°43′35″W, 11 Jan 2011, *L.P. Felix 13201* (EAN) [Fig. 15E].

Cattleya guttata Lindl.

2*n* = 40, CHN. Brazil, Bahia, Itaibó, 13°55′49″S, 39°44′05″W, 7 Oct 2013, *L.P. Felix 14450* (EAN) [Fig. 15F].

Cattleya intermedia Graham

2*n* = 40, CHN. Brazil, Rio Grande do Sul, Rio Grande, 32°04′41″S, 52°16′43″W, 30 Oct 2000, *L.P. Felix 8973* (EAN) [Fig. 15G].

Cattleya nobilior Rchb.f.

2*n* = 42, CHN. Brazil, Tocantins, Palmas, 10°04′48″S, 48°12′35″W, 4 Set 2004, *L.P. Felix 2420* (EAN) [Fig. 16A].

***Cattleya pfisteri* (Pabst & Senghas) Van den Berg

2*n* = 40, CHN. Brazil, Bahia, Barra da Estiva, 13°37′31″S, 41°20′31″W, 11 Oct 2013, *L.P. Felix 14501* (EAN) [Fig. 16C].

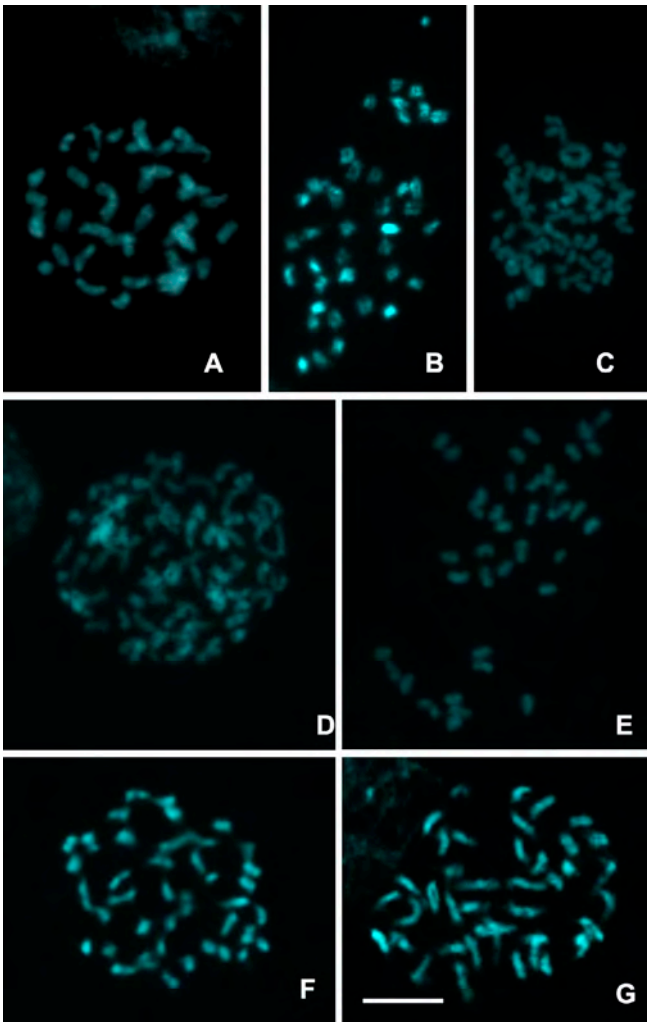

Fig. 15. A, *Cattleya aclandiae*, 2*n* = 40; **B,** *Cattleya cernua*, 2*n* = 40; **C,** *Cattleya crispata*, 2*n* = 80; **D,** *Cattleya elongata*, 2*n* = 80; **E,** *Cattleya grandis*, 2*n* = 40; **F,** *Cattleya guttata*, 2*n* = 40; **G,** *Cattleya intermedia*, 2*n* = 40. — Scale bar = 5 µm.

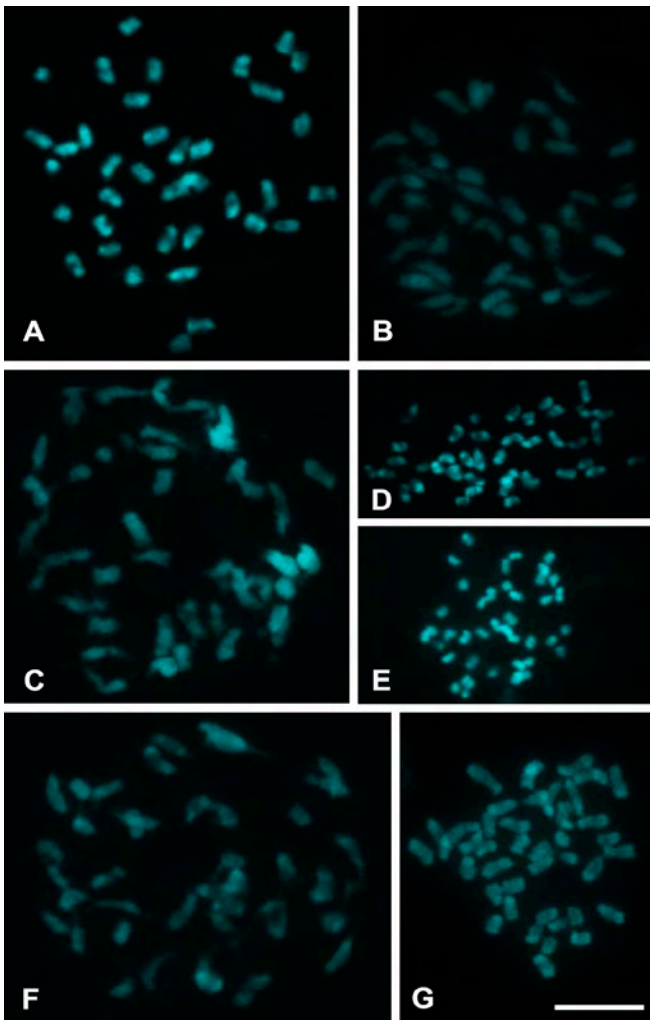

Fig. 16. A, *Cattleya nobilior*, 2*n* = 42; **B,** *Cattleya rupestris*, 2*n* = 40; **C,** *Cattleya pfisteri*, 2*n* = 40; **D,** *Cattleya walkeriana*, 2*n* = 40; **E,** *Cattleya warneri*, 2*n* = 40; **F,** *Cattleya sincorana*, 2*n* = 40; **G,** *Cattleya tenuis*, 2*n* = 40. — Scale bar = 5 µm.

***Cattleya rupestris* (Lindl.) Van den Berg
2*n* = 40, CHN. Brazil, Minas Gerais, Diamantina, 18°19′11″S, 43°41′27″W, 30 Jan 2015, *L.P. Felix 15346* (EAN) [Fig. 16B].

***Cattleya sincorana* (Schltr.) Van den Berg
2*n* = 40, CHN. Brazil, Bahia, Ibicoara, 13°23′52″S, 41°13′59″W 24 Jan 2014, *L.P. Felix 14550* (EAN) [Fig. 16F].

***Cattleya tenuis* Campacci & Vedovello
2*n* = 40, CHN. Brazil, Bahia, Bonina, 12°39′07″S, 41°49′44″W 27 Apr 2015, *L.P. Felix 15454* (EAN) [Fig. 16G].

Cattleya walkeriana Gardner
2*n* = 40, Brazil, Goiás, Piracanjuba, 17°16′23″S, 49°02′05″W, 1 Jun 2012, *E.M. Almeida 509* (EAN) [Fig. 16D].

Cattleya warneri T.Moore ex Warner
2*n* = 40, CHN. Brazil, Bahia, Itabuna, 14°46′41″S, 39°17′44″W, 11 Oct 2013, *L.P. Felix 14502* (EAN) [Fig. 16E].

Encyclia advena (Rchb.f.) Porto & Brade
2*n* = 40, CHN. Brazil, Alagoas, União dos Palmares, 09°02′06″S, 35°52′32″W, 30 Oct 2014, *J.M.P. Cordeiro 478* (EAN) [Fig. 17A].

***Encyclia andrichii* L.C.Menezes
2*n* = 40, CHN. Brazil, Bahia, Morro do Chapéu, 11°31′19″S, 41°16′53″W, 18 Jan 2011, *L.P. Felix 13391* (EAN) [Fig. 17B].

Encyclia flava (Lindl.) Porto & Brade
2*n* = 40, CHN. Brazil, Tocantins, Nova Jardim, 11°51′05″S, 46°33′26″W, 16 Jan 2015, *J.M.P. Cordeiro 714* (EAN) [Fig. 17C].

***Encyclia ionosma* (Lindl.) Schltr.
2*n* = 40, CHN. Brazil, Minas Gerais, São Roque de Minas, 20°20′27″S, 46°26′48″W, 27 Jan 2015, *L.P. Felix 15258* (EAN) [Fig. 17D].

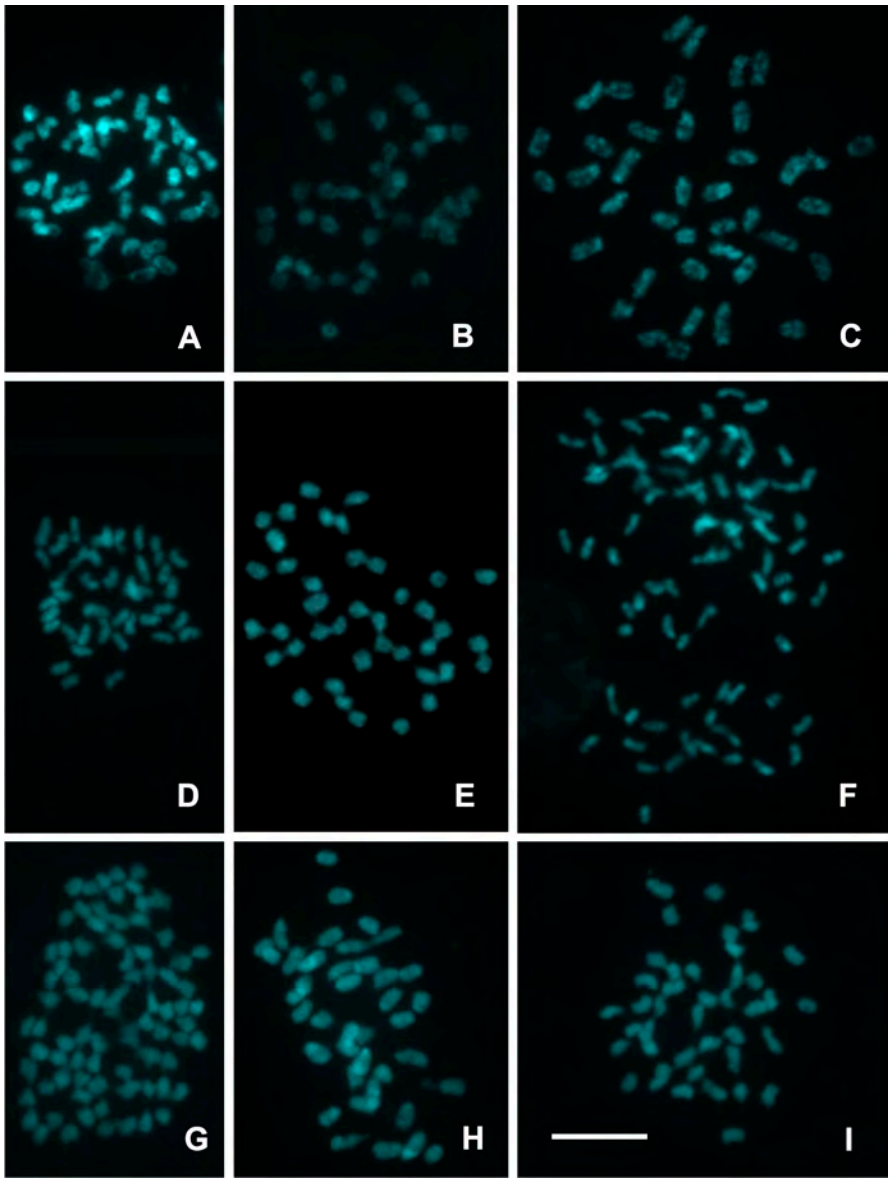

Fig. 17. A, *Encyclia advena*, 2*n* = 40; **B,** *Encyclia andrichii*, 2*n* = 40; **C,** *Encyclia flava*, 2*n* = 40; **D,** *Encyclia ionosma*, 2*n* = 40; **E,** *Encyclia oncidioides*, 2*n* = 40; **F,** *Encyclia jenischiana*, 2*n* = 80; **G,** *Encyclia seidelii*, 2*n* = 80; **H,** *Encyclia* sp. aff. *osmantha*, 2*n* = 40; **I,** *Encyclia* sp., 2*n* = 40. — Scale bar = 5 µm.

***Encyclia jenischiana* (Rchb.f.) Porto & Brade
2*n* = 80, CHN. Brazil, Bahia, Serra da Jiboia, 12°51′03″ S, 39°28′45″ W, 15 Jan 2011, *L.P. Felix 13323* (EAN) [Fig. 17F].

Encyclia oncidioides (Lindl.) Schltr.
2*n* = 40, CHN. Brazil, Bahia, Morro do Chapéu, 11°31′19″ S, 41°16′53″ W, 16 Jan 2015, *E.M. Almeida 693* (EAN) [Fig. 17E].

***Encyclia seidelii* Pabst
2*n* = 80, CHN. Brazil, Minas Gerais, Diamantina, 17°56′07″ S, 43°36′46″ W, 31 Jan 2015, *L.P. Felix 15373* (EAN) [Fig. 17G].

***Encyclia* sp. aff. *osmantha*
2*n* = 40, CHN. Brazil, Bahia, Salvador, 12°57′47″ S, 38°25′17″ W, 15 Jan 2011, *L.P. Felix 13298* (EAN) [Fig. 17H].

Encyclia sp.
2*n* = 40, CHN. Brazil, Bahia, Una, 15°16′10″ S, 39°04′44″ W, 11 Aug 2015, *E.M. Almeida 1468* (EAN) [Fig. 17I].

Epidendrum armeniacum Lindl.
2*n* = 40, CHN. Brazil, Ceará, Pacoti, 04°13′34″ S, 38°54′57″ W, 28 Aug 2014, *L.P. Felix 15112* (EAN) [Fig. 18A].

Epidendrum difforme Jacq.
2*n* = 40, CHN. Brazil, Alagoas, Quebrangulo, 09°19′08.9″ S, 36°27′38.9″ W, 25 Aug 2013, *L.P. Felix 14335* (EAN) [Fig. 18B].

Epidendrum fulgens Brongn.
2*n* = 24, CHN. Brazil, Paraíba, São João do Tigre, 08°05′36″ S, 36°41′16″ W, 3 Aug 2012, *S. Nascimento 92* (EAN) [Fig. 18C].

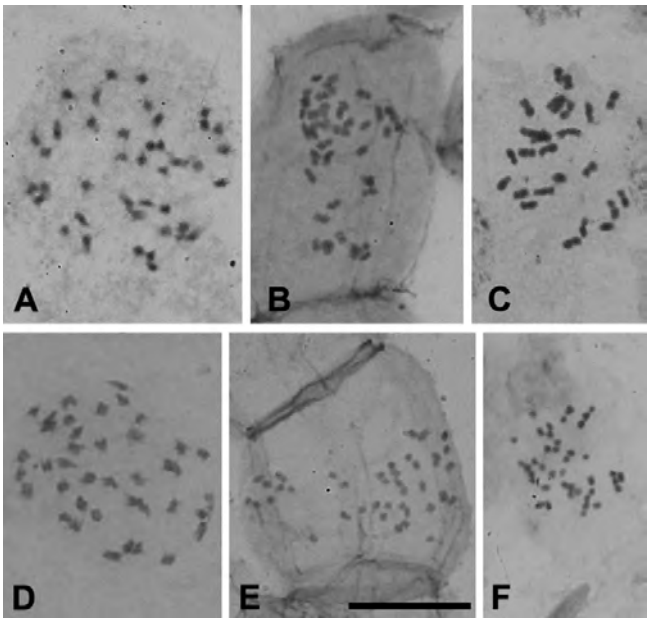

Fig. 18. A, *Epidendrum armeniacum*, 2*n* = 40; **B,** *Epidendrum difforme*, 2*n* = 40; **C,** *Epidendrum fulgens*, 2*n* = 24; **D,** *Epidendrum paniculatum*, 2*n* = 40; **E,** *Isochilus linearis*, 2*n* = 40; **F,** *Prosthechea alagoensis*, 2*n* = 40. — Scale bar = 10 µm.

Epidendrum paniculatum Ruiz & Pav.
2*n* = 40, CHN. Brazil, Pernambuco, Maraial, 08°47′08″ S, 35°48′30″ W, 21 Dec 2007, *L.P. Felix 12074* (EAN) [Fig. 18D].

**Isochilus linearis* (Jacq.) R.Br.
2*n* = 40, CHN. Brazil, Pernambuco, Brejo da Madre de Deus, 08°08′54″ S, 36°21′40″ W, 9 Sep 2009, *L.P. Felix 12716* (EAN) [Fig. 18E].

Laelia marginata (Lindl.) L.O.Williams
2*n* = 40, CHN. Brazil, Ceará, Viçosa, 03°33′48.7″ S, 41°02′44″ W, 23 Aug 2011, *L.P. Felix s.n.* (EAN 18715) [Fig. 14C].

Prosthechea alagoensis (Pabst.) W.E.Higgins
2*n* = 40, CHN. Brazil, Pernambuco, Brejo da Madre de Deus, 08°05′21″ S, 36°17′33″ W, 7 Mar 2010, *E.M. Almeida 32* (EAN) [Fig. 18F].

***Prosthechea faresiana* (Bicalho) W.E.Higgins
2*n* = 80, CHN. Brazil, Bahia, Morro do Chapéu, 11°31′19″ S, 41°16′53″ W, 18 Jan 2011, *J.M.P. Castro 127* (EAN) [Fig. 14D].

Prosthechea fragrans (Sw.) W.E.Higgins
2*n* = 40, CHN. Brazil, Bahia, Morro do Chapéu, 11°22′14″ S, 41°14′21″ W, 17 Jan 2003, *L.P. Felix 13391* (EAN) [Fig. 14E].

Scaphyglottis fusiformis (Griseb.) R.E.Schult.
2*n* = 40, CHN. Brazil, Bahia, Una, 15°16′15″ S, 39°04′48″ W, 10 Feb 2015, *E.M. Almeida 1408* (EAN) [Fig. 14F].

***Scaphyglottis sickii* Pabst
2*n* = 40, CHN. Brazil, Alagoas, União dos Palmares, 09°08′48″ S, 35°55′48″ W, 30 Oct 2014, *J.M.P. Cordeiro 496* (EAN) [Fig. 14G].

The family Orchidaceae comprises approximately 28,000 species distributed among 736 genera (Chase & al., 2015; Christenhusz & Byng, 2016); chromosome numbers are known for approximately 15% of its species, with wide variations from 2*n* = 10 for *Erycina pusilla* (L.) N.H.Williams & M.W.Chase (Yeh & al., 2015) to 2*n* = 240 for *Epidendrum cinnabarinum* Salzm. ex Lindl. (Felix & Guerra, 2010; Assis & al., 2013). The subtribe Laeliinae is subordinated to the subfamily Epidendroideae and constitutes a clearly monophyletic group (Van den Berg & al., 2009) characterized by the basic number *x* = 20, and its evolution driven principally by polyploidy (Felix & Guerra, 2010). The best-studied groups in terms of their chromosomes are the genera *Cattleya* Lindl. and *Epidendrum* L.; the latter demonstrates the largest chromosomal variation in the family, especially the subgenus *Amphiglottium* Lindl., with numbers from 2*n* = 24 in *E. fulgens* Brongn. to 2*n* = 240 in *E. cinnabarinum* (Assis & al., 2013). The chromosomes of genera such as *Barkeria* Knowl. & Westc. and *Pseudolaelia* Porto & Brade (Rice & al., 2014) have not yet been studied, while *Scaphyglottis* Poepp. & Endl, with more than 60 species, has only two published counts (Felix & Guerra, 2010).

We analyzed the chromosomes of 36 species of the subtribe Laeliinae belonging to the genera *Brassavola* R.Br., *Cattleya*, *Encyclia* Hook., *Epidendrum*, *Isochilus* R.Br., *Laelia* Lindl., *Prosthechea* Knowles & Westc., and *Scaphyglottis*. Most of the species demonstrated 2*n* = 40, except for *Epidendrum fulgens* with 2*n* = 24, *Cattleya nobilior* with 2*n* = 42, and *C. crispata*, *C. elongata*, *Encyclia jenischiana*, *E. seidelii* and *Prosthechea faresiana* with 2*n* = 80. Of the taxa analyzed, there were no previous records for the genus *Isochilus* or for 16 other species. Among the species with previously

known chromosome records, all had at least one of their earlier counts confirmed. Nonetheless, the counts for *Cattleya nobilior* (2*n* = 42) contrasted with earlier record of 2*n* = 40 for species (Tanaka & Kamemoto, 1984). The number reported by Felix & Guerra (2010) for *C. nobilior*, on the other hand, was confirmed.

Among the species analyzed using DAPI staining, we observed DAPI bands in the subterminal region of one or both arms of species of *Brassavola* (Fig. 14A, B) and *Laelia* (Fig. 14C), as well as in *Cattleya nobilior* (Fig. 16A), *C. walkeriana* (Fig. 16D), *Encyclia flava* (Fig. 17C), and *Encyclia* sp. aff. *osmantha* (Fig. 17H). Proximal DAPI bands were observed in *Scaphyglottis fusiformis* (Fig. 14F), *Scaphyglottis sickii* (Fig. 14G), and in *Cattleya cernua* (Fig. 15B). Within the genus *Prosthechea*, *P. faresiana* (Fig. 14D) demonstrated three proximal bands, two homozygotic bands, and one subterminal heterozygotic band; the other species did not demonstrate clearly defined DAPI bands, indicating that their genomes did not contain AT-rich heterochromatin sites (Guerra, 2000).

An analysis of numerical chromosome variations in the subtribe Laeliinae indicated that the principal variations were restricted to the genus *Epidendrum*, especially the subgenus *Amphiglottium* with its extensive chromosomal numerical variation resulting from polyploidy, disploidy, or aneuploidy mediated by interspecific hybridization (Assis & al., 2013; Moraes & al., 2013). Other species, such as *E. ciliare* L. and *E. nocturnum* Jacq., likewise demonstrated intraspecific ploidy level variations apparently related to speciation and the formation of cryptic species (Dodsworth & al., 2015). The genus *Cattleya*, the most amply sampled within the subtribe, apparently evolved principally through polyploidy (Felix & Guerra, 2010); rare examples of reductions or increases in chromosome numbers were restricted to disploidy events, such as those seen in the related species *C. walkeriana* and *C. nobilior* (Felix & Guerra, 2010 and the present study). The aneuploidy and polyploidy observed in saxicolous species such as *C. briegeri* (Blumensch. ex Pabst) Van den Berg and *C. rupestris* (Lindl.) Van den Berg apparently arose from hybridization events followed by increases or decreases in the numbers of chromosomes (Yamagishi-Costa & Forni-Martins, 2009). Summarizing, chromosomal evolution in the subtribe Laeliinae is mediated principally by polyploidy events that are well-established in some species, and occasional disploidy, or by both processes acting together in some taxonomic groups such as the subgenus *Amphiglottium* of *Epidendrum* or in some saxicolous species complexes of *Cattleya*.

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* First chromosome count for the taxon.
** New chromosome number (cytotype) for the species.
▼ First chromosome count from an unexplored part of the distribution area of the taxon.

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IRIDACEAE

Subfamily: Iridoideae – Tribe: Sisyrinchieae

Sisyrinchium arenarium Poepp. subsp. *arenarium*

$2n = 18$, CHN. Chile, Region VII, Laguna Maule, 1600–2600 m, 2008, *O. Chauveau H09047* (ICN) [Fig. 19A].

The current chromosome count is in agreement with the previous reports of Kenton & al. (1986) and Rodríguez (1986). A previous study described for the species $n = 8$ (De Nordenflycht, 1981), therefore a different basic number.

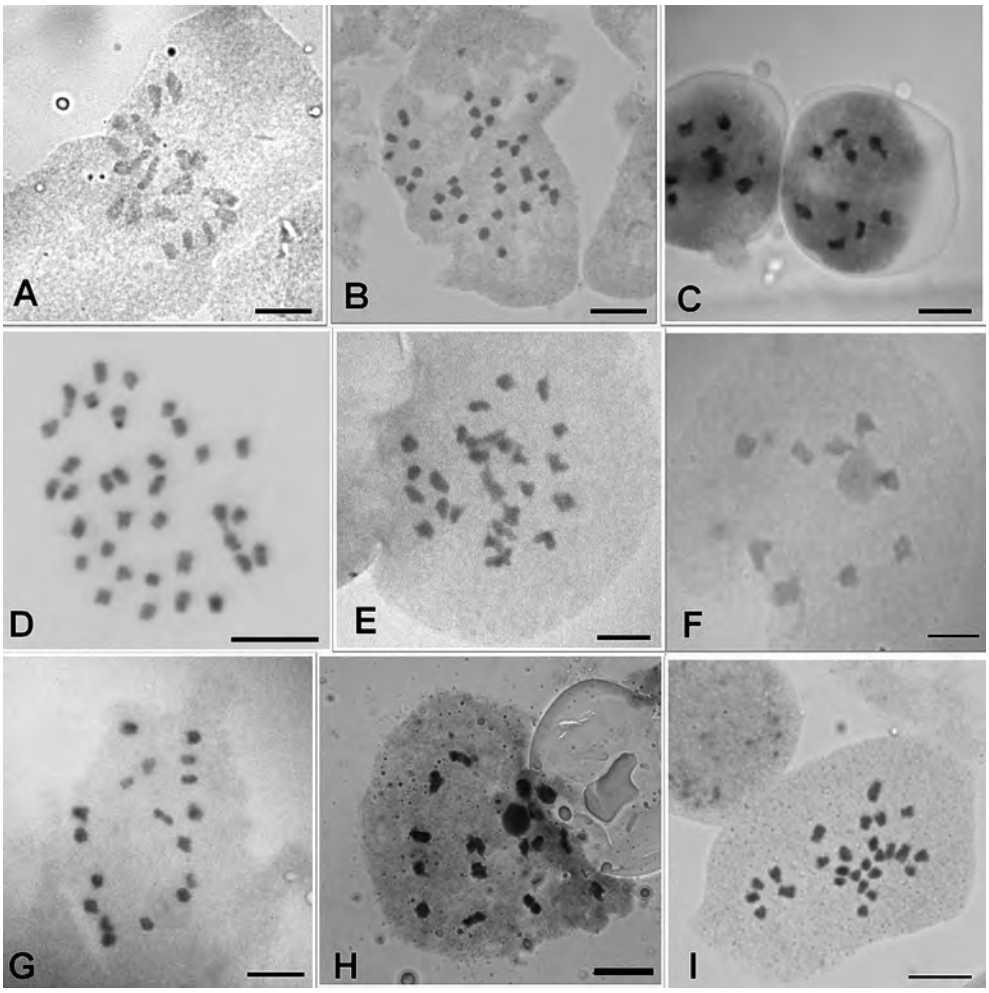

Fig. 19. A, *Sisyrinchium arenarium* subsp. *arenarium*, mitotic metaphase, $2n = 18$; **B,** *Sisyrinchium chilense*, mitotic metaphase, $2n = 32$; **C,** *Sisyrinchium commutatum*, PMC at diakinesis, $n = 9$; **D,** *Sisyrinchium elmeri*, mitotic metaphase, $2n = 34$; **E,** *Sisyrinchium fiebrigii*, PMC at diakinesis, $n = 27$; **F,** *Sisyrinchium hoehnei*, PMC at diakinesis, $n = 9$; **G,** *Sisyrinchium laxinervium*, PMC at diakinesis, $n = 18$; **H,** *Sisyrinchium megapotamicum*, PMC at diakinesis, $n = 16$; **I,** *Sisyrinchium minus*, mitotic metaphase, $2n = 26$. — Scale bars = 10 µm.

▼****Sisyrinchium chilense** Hook.

2*n* = 32, CHN. Peru, Apurimac, Abancay up Capuliyoc, Cachora, 3100 m [*Sisyrinchium* collection of the National Council for the Conservation of Plants and Gardens (NCCPG) – U.K.], *L. Eggers & al. H09004* (ICN) [Fig. 19B].

Two previous works for Chilean plants reported different chromosome numbers for this species. Kenton & al. (1986) found 2*n* = 16, whereas Rodríguez (1986) observed 2*n* = 90. Our results are the first chromosome number report for specimens from Peru representing a new cytotype.

**Sisyrinchium commutatum* Klatt

2*n* = 18, CHN. Brazil, Paraná, Palmeira, 25°26′10.5″ S, 49°58′40.7″ W, 15 Oct 2007, *L. Eggers & T.T. Souza-Chies 245* (ICN); Brazil, Paraná, Castro, 24°43′37.0″ S, 49°59′14.4″ W, 25 Oct 2008, *L. Eggers & T.T. Souza-Chies 331* (ICN) [Fig. 19C].

Sisyrinchium elmeri Greene

2*n* = 34, CHN. U.S.A., California, Sierra Nevada (Santa Barbara Botanical Garden) [in vitro collection number SIS106.04 of *Sisyrinchium* collection of the National Council for the Conservation of Plants and Gardens (NCCPG) – U.K.], 1991, *O. Chauveau & E. Heaton H09042* (ICN) [Fig. 19D].

This record is in accordance with previous data (eFloras, 2016).

**Sisyrinchium fiebrigii* I.M.Johnst.

2*n* = 54, CHN. Brazil, Paraná, Tijucas do Sul, 25°50′11″ S, 49°08′06.1″ W, 899 m, 24 Oct 2008, *L. Eggers & T.T. Souza-Chies 325* (ICN) [Fig. 19E].

**Sisyrinchium hoehnei* I.M.Johnst.

2*n* = 18, CHN. Brazil, Paraná, Guarapuava, 25°24′22.4″ S, 51°42′58.9″ W, 931 m, 30 Oct 2008, *L. Eggers & T.T. Souza-Chies 375* (ICN) [Fig. 19F].

**Sisyrinchium laxinervium* Ravenna

2*n* = 36, CHN. Peru, Cuzco, Huarocondo, 13°26′14.0″ S, 72°12′08.5″ W, 15 Jan 2011, *L. Eggers & al. 047-2011* (CUZ, ICN) [Fig. 19G].

**Sisyrinchium megapotamicum* Malme

2*n* = 32, CHN. Brazil, Rio Grande do Sul, Pinheiro Machado, 31°37′55.9″ S, 53°27′01.9″ W, 321 m, 2 Oct 2009, *L. Eggers & T.T. Souza-Chies 474* (ICN) [Fig. 19H].

***Sisyrinchium minus* Engelm. & A.Gray

2*n* = 26, CHN. Brazil, Santa Catarina, Lages, 27°43′35.2″ S, 50°20′07.6″ W, 12 Oct 2007, *L. Eggers & T.T. Souza-Chies 230* (ICN) [Fig. 19I].

Previously, the species was reported to have 2*n* = 10 (Oliver & Lewis, 1962).

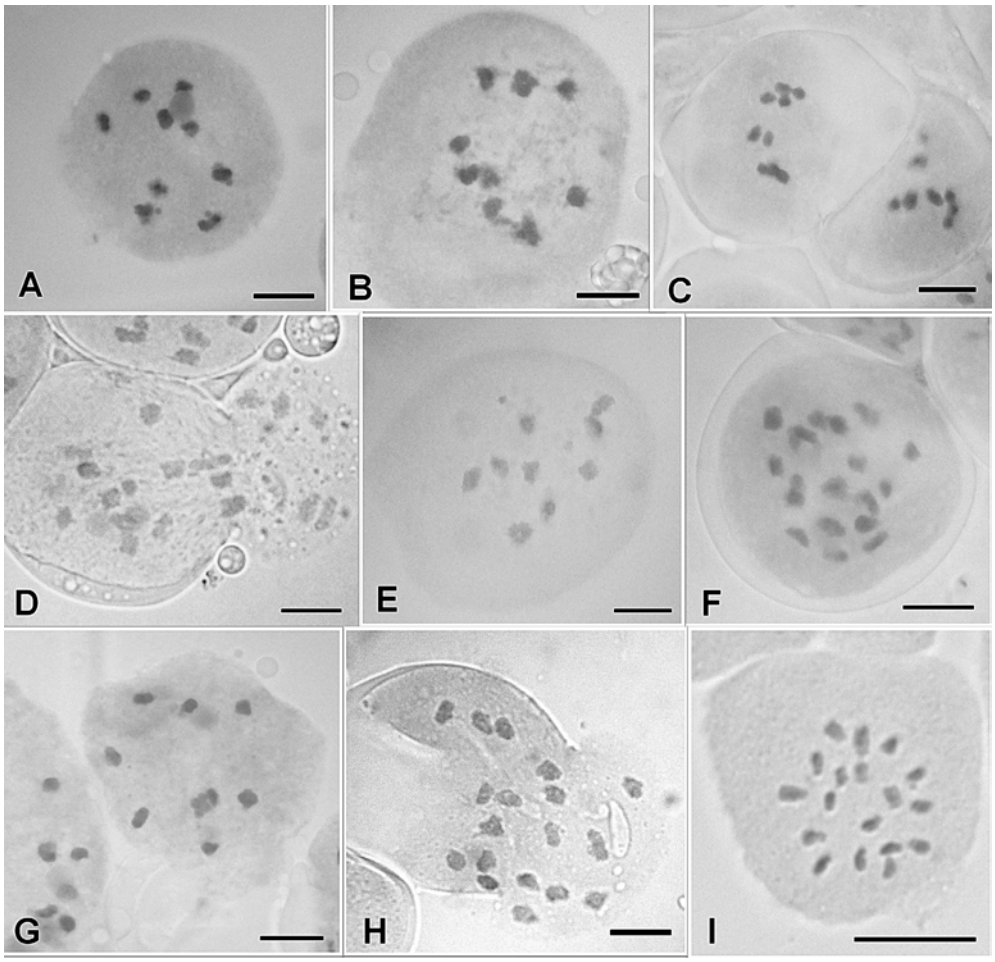

Fig. 20. A, *Sisyrinchium osteninanum*, PMC at diakinesis, *n* = 9; **B,** *Sisyrinchium platycaule*, PMC at diakinesis, *n* = 9; **C,** *Sisyrinchium purperellum*, PMC at diakinesis, *n* = 9; **D,** *Sisyrinchium purpurellum*, PMC at diakinesis, *n* = 18; **E,** *Sisyrinchium scariosum*, PMC at diakinesis, *n* = 9; **F,** *Sisyrinchium scariosum*, PMC at diakinesis, *n* = 18; **G,** *Sisyrinchium sellowianum*, PMC at diakinesis, *n* = 9; **H,** *Sisyrinchium sellowianum*, PMC at diakinesis, *n* = 18; **I,** *Sisyrinchium setaceum*, mitotic metaphase, 2*n* = 18. — Scale bars = 10 µm.

**Sisyrinchium ostenianum* Beauverd

2*n* = 18, CHN. Brazil, Rio Grande do Sul, Pedro Osório, 31°51′15.0″ S, 52°42′16.4″ W, 3 Oct 2009, *L. Eggers & T.T. Souza-Chies 475* (ICN) [Fig. 20A].

**Sisyrinchium platycaule* Baker

2*n* = 18, CHN. Brazil, Paraná, Sengés, 24°03′40.5″ S, 49°31′18.3″ W, 26 Oct 2008, *L. Eggers & T.T. Souza-Chies 337* (ICN); Brazil, Rio Grande do Sul, Bom Jesus, 28°27′06.5″ S, 50°17′34.8″ W, 10 Nov 2011, *L. Eggers & T.T. Souza-Chies 686* (ICN) [Fig. 20B].

**Sisyrinchium purpurellum* Ravenna

2*n* = 18, CHN. Brazil, Santa Catarina, São Joaquim, 28°13′43.2″ S, 49°50′51.3″ W, 1481 m, 11 Nov 2011, *L. Eggers & T.T. Souza-Chies 689* (ICN) [Fig. 20C].

2*n* = 36, CHN. Brasil, Paraná, Castro, 24°43′47.9″ S, 49°59′18.9″ W, 1055 m, 20 Nov 2010, *L. Eggers & T.T. Souza-Chies 625* (ICN) [Fig. 20D].

**Sisyrinchium scariosum* I.M.Johnst.

2*n* = 18, CNH. Brazil, Santa Catarina, Herciópolis, 26°44′07.3″ S, 51°33′54.8″ W, 14 Oct 2007, *L. Eggers & T.T. Souza-Chies 235* (ICN) [Fig. 20E].

2*n* = 36, CNH. Brazil, Rio Grande do Sul, São Lourenço do Sul, 31°22′22.2″ S, 52°05′56.1″ W, 19 Oct 2007, *L. Eggers & T.T. Souza-Chies 277* (ICN) [Fig. 20F].

**Sisyrinchium sellowianum Klatt*

2*n* = 18, CHN. Brazil, Rio Grande do Sul, Porto Alegre, 30°04′13.88″ S, 51°07′11.63″ W, 26 Oct 2007, *L. Eggers & T.T. Souza-Chies 209* (ICN); Brazil, Santa Catarina, Herciliópolis, 26°44′07.3″ S, 51°33′54.8″ W, 14 Oct 2007, *L. Eggers & T.T. Souza-Chies 238* (ICN) [Fig. 20G].

2*n* = 36, CHN. Brazil, Rio Grande do Sul, Tainhas, 29°16′42.9″ S, 50°19′34.1″ W, 889 m, 27 Nov 2008, *L. Eggers & T.T. Souza-Chies 458* (ICN); Brazil, Rio Grande do Sul, Caxias do Sul, 29°04′00.4″ S, 50°58′31.5″ W, 835 m, 09 Nov 2009, *L. Eggers & T.T. Souza-Chies 561* (ICN) [Fig. 20H]; Brazil, Paraná, Guarapuava, 25°22′45.7″ S, 51°30′29.2″ W, 1037 m, 30 Oct 2008, *L. Eggers & T.T. Souza-Chies 372* (ICN).

**Sisyrinchium setaceum* Klatt

2*n* = 18, CNH. Brazil, Rio Grande do Sul, São Francisco de Paula, 29°26′44.9″ S, 50°36′17.6″ W, 10 Oct 2007, *L. Eggers & T.T. Souza-Chies 214* (ICN); Brazil, Santa Catarina, São Joaquim, 28°13′43.2″ S, 49°50′51.3″ W, 1481 m, 11 Nov 2011, *L. Eggers & T.T. Souza-Chies 690* (ICN) [Fig. 20I].

**Sisyrinchium soboliferum* Ravenna

2*n* = 96, CNH. Brazil, Paraná, Vitorino, 26°15′41.7″ S, 52°57′55.2″ W, 750 m, 31 Oct 2008, *L. Eggers & T.T. Souza-Chies 381* (ICN) [Fig. 21A].

Sisyrinchium tenuifolium Humb. & Bonpl. ex Willd.

2*n* = 36, CHN. Mexico, Veracruz, Puerto del Aire, Rio Blanco canyon, 2000 m [cultivated material number R09250 of Botanical Garden of the University Paris-Sud (UPSBG) – France], *O. Chauveau & F. Pautz H09025* (ICN) [Fig. 21B].

The present chromosomal count is in agreement with earlier reports by Kenton & al. (1986) and Goldblatt (1982); however, Niehaus & Wong (1971) observed 2*n* = 32 for this species.

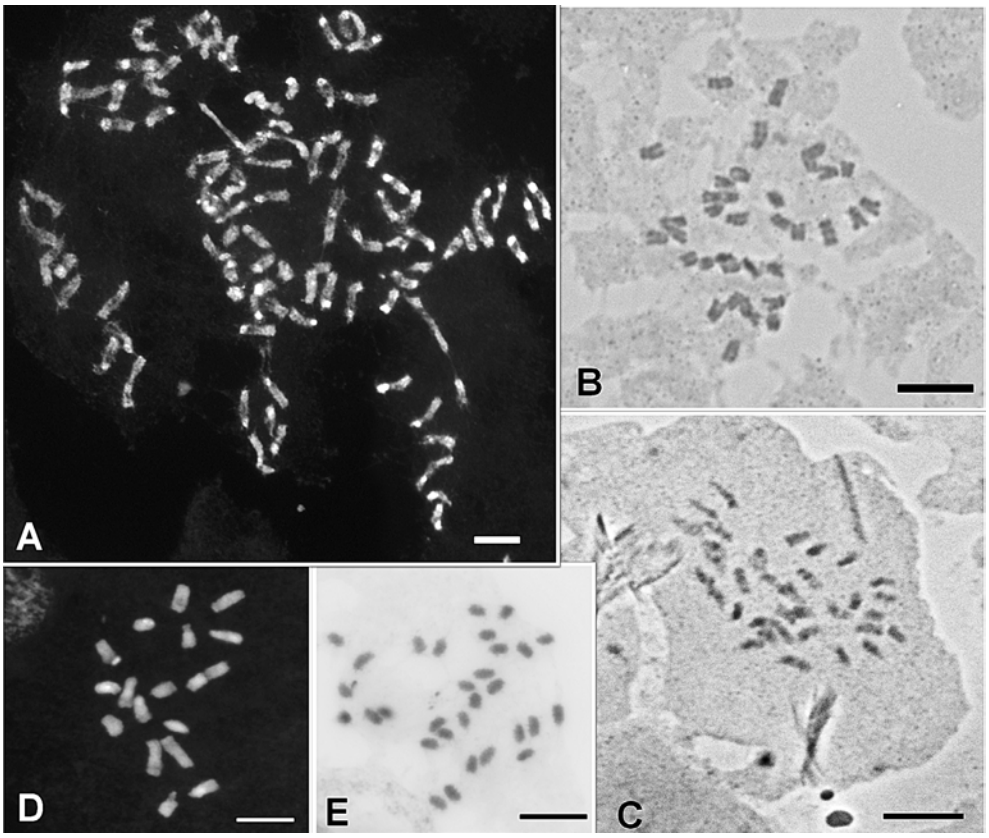

Fig. 21. A, *Sisyrinchium soboliferum*, DAPI-stained mitotic metaphase, 2*n* = 96; **B,** *Sisyrinchium tenuifolium*, mitotic metaphase, 2*n* = 36; **C,** *Sisyrinchium tinctorium*, mitotic metaphase, 2*n* = 36; **D,** *Sisyrinchium* cf. *tofoense* DAPI-stained mitotic metaphase, 2*n* = 18; **E,** *Sisyrinchium uliginosum*, mitotic metaphase, 2*n* = 30. — Scale bars = 10 µm.

Table 3. Geographical origin, basic chromosome number (*x*), 2*n* chromosome number and ploidy level of investigated species grouped according to their clade number.

Sisyrinchium species	Locality	Clade	*x*	2*n*	Ploidy level
S. laxinervium	Brazil	0	9	36	Tetraploid
S. elmeri	U.S.A.	I	17	34	Diploid
S. tinctorium	Ecuador	I	9	36	Tetraploid
S. tenuifolium	Mexico	II	9	36	Tetraploid
S. arenarium subsp. *arenarium*	Chile	III	9	18	Diploid
S. cf. *tofoense*	Chile	III	9	18	Diploid
S. commutatum	Brazil	V	9	18	Diploid
S. fiebrigii	Brazil	V	9	54	Hexaploid
S. hoehneii	Brazil	V	9	18	Diploid
S. ostenianum	Brazil	V	9	18	Diploid
S. platycaule	Brazil	V	9	18	Diploid
S. purpurellum	Brazil	V	9	18 / 36	Diploid / Tetraploid
S. scariosum	Brazil	V	9	18 / 36	Diploid / Tetraploid
S. sellowianum	Brazil	V	9	18 / 36	Diploid / Tetraploid
S. setaceum	Brazil	V	9	18	Diploid
S. soboliferum	Brazil	V	8	96	Dodecaploid
S. megapotamicum	Brazil	VI	8	32	Tetraploid
S. uliginosum	Brazil	VI	5	30	Hexaploid
S. minus	Brazil	VIII	13(?)	26	Diploid (?)
S. chilense	Peru	chilense	8	32	Tetraploid

Sisyrinchium tinctorium Kunth

2*n* = 36, CHN. Ecuador, Calchi, Tulcán [*Sisyrinchium* collection of the National Council for the Conservation of Plants and Gardens (NCCPG) – U.K.], *Heaton SIS143.06*, *O. Chauveau & E. Heaton H09034* (ICN) [Fig. 21C].

The same chromosome number was reported by Kenton & al. (1986).

**Sisyrinchium* cf. *tofoense* Ravenna

2*n* = 18, CHN. Chile, Region IV, Panamericana Norte, 236 km north of Santiago, *O. Chauveau H09057* (ICN) [Fig. 21D].

**Sisyrinchium uliginosum* Ravenna

2*n* = 30, CHN. Brazil, Paraná, União da Vitória, 26°16′22.2″S, 51°10′41.1″W, 1008 m, 02 Nov 2008, *L. Eggers & T.T. Souza-Chies 393* (ICN) [Fig. 21E].

Sisyrinchium L. is the largest genus of Sisyrinchieae (Iridoideae, Iridaceae) comprising around of 140 species with a distribution that extends from subarctic areas to Tierra del Fuego (Rudall & al., 1986; Goldblatt & Manning, 2008; Chauveau & al., 2011). The genus is highly complex with many taxonomic uncertainties and poorly solved taxonomy (Goldblatt, 1982; Kenton & al., 1986; Chauveau & al., 2011; Alves & al., 2014). *Sisyrinchium* is monophyletic and divided in nine well-established clades (Chauveau & al., 2011). Polyploidy, hybridization and dysploidy are important factors in the complex evolution of *Sisyrinchium*. The ancestral base number is probably $x = 9$; secondary dysploid numbers have been found such as $x_2 = 8$, 5, 6, and $x_2 = 17$ which have probably arisen by polyploidization after hybridization of taxa with $x = 9$ and $x = 8$. Many polyploid series were also reported for the genus (Goldblatt & Manning, 2008; Tacuatiá & al., 2012). Chromosome numbers are known for approximately 60 species of *Sisyrinchium*, most of them from Northern Hemisphere (Goldblatt & Johnson, 2010; Chromosome Counts Database, 2016). In comparison, South American ones are poorly investigated in terms of cytological data (Goldblatt, 1982; Kenton & al., 1986), especially those from Brazil. The great variability found in terms of basic number, ploidy level and chromosome size provides useful characters for comprehension of the systematics and evolution of *Sisyrinchium*.

The present study was undertaken aiming to obtain new chromosome counts from *Sisyrinchium* species and confirm previously described numbers, broadening the available data for chromosome evolutionary studies of the genus.

The cytological investigation was carried out by mitotic and meiotic analyses. For somatic chromosome preparations, root tips were pretreated with 8-hydroxyquinoline for 24 hours at 8°C and fixed with 3 : 1 ethanol : glacial acetic acid. Giemsa conventional staining was used following Guerra & Souza (2002). For two species, some slides were prepared following the standard DAPI method. Young inflorescences were collected and fixed (3 : 1 ethanol : acetic acid) for meiotic analysis. Anthers were squashed in 1% propionic carmine for slides preparation. Chromosome counts were performed preferentially in diakinesis and sometimes in anaphase I.

In this paper, we present the chromosome number and ploidy level of 20 taxa and discuss data regarding eight clades identified in recent phylogenetic studies on *Sisyrinchium* (Chauveau & al., 2011; Alves & al., 2014) (Table 3).

Fourteen of them were cytologically investigated for the first time and new cytotypes were found for other two species. Five basic numbers were observed: $x = 5$, 8, 9, 13 and 17, although the most common was $x = 9$. Mostly diploid and tetraploid *Sisyrinchium* taxa were recorded, but also two hexaploid and one dodecaploid ones (Table 3). Moreover, the number of polyploid representatives throughout the genus is remarkable, regardless of their clade in the phylogeny of *Sisyrinchium* confirming that polyploidy is an important event in the evolution of Iridaceae.

The *Sisyrinchium* species analyzed have small chromosomes and usually symmetric karyotypes, a common pattern in the genus (Kenton & al., 1986).

Sisyrinchium laxinervum, the first species of the clade 0 with chromosome number determined, is tetraploid based on $x = 9$. For the clade I, two basic numbers were detected in our study: $x = 9$ for *S. tinctorium* and $x = 17$ for *S. elmeri* (Table 3). The first species is diploid while the second is tetraploid. *Sisyrinchium arenarium* subsp. *arenarium* and *Sisyrinchium* cf. *tofoense* are representatives of the clade III. Both taxa have basic chromosome number $x = 9$ as the remainder species of this clade. Ten species of clade V were analyzed and all but one have $x = 9$. *Sisyrinchium soboliferum* is a dodecaploid from $x = 8$. High ploidy levels are uncommon in Brazilian species of *Sisyrinchium*; generally the polyploids are tetraploids or hexaploids. However, the diploids ($2n = 18$) are more frequent for clade V. Three species of this clade have more than one chromosome number. *Sisyrinchium purpurellum*, *S. scariosum* and *S. sellowianum* have diploid ($2n = 18$) and tetraploid ($2n = 36$) populations. *Sisyrinchium megapotamicum* and *S. uliginosum* belong to the clade VI. The first species has $x = 8$ ($2n = 4x = 32$) like *S. pachyrhizum* ($2n = 12x = 96$) that is the only other species previously investigated in this clade (Kenton & al., 1986). The chromosome number for *S. uliginosum* is $2n = 30$ and probably has arisen from a descending disploidy from a tetraploid ($2n = 4x = 32\text{-}2 = 30$). On the other hand, a hexaploid condition ($2n = 6x = 30$) can not be ruled out, since the basic number $x = 5$ is reported for genus *Sisyrinchium*, altough be less frequent (Goldblatt & Manning, 2008). The clade VIII comprises only two species: *S. minus* and *S. minutiflorum*. Chromosome number was previously determined just for the first one ($2n = 10$) using plants from Mexico (Oliver & Lewis 1962). Surprisingly, we found for Brazilian specimens of *S. minus* not only a different chromosome number ($2n = 26$), but also a different basic number. So far as we know, the base number $x = 13$ was never reported before for *Sisyrinchium*. The phylogenetic tree presents *S. chilense* between the clades V and VI (Chauveau & al., 2011), named the *S. chilense* group (Alves & al., 2014). According to literature, two chromosome numbers have been reported for this group $2n = 16$ (Kenton & al., 1986) and $2n = 90$ (Rodríguez, 1986). Both works analyzed Chilean plants. In the present study, we found $2n = 32$ for individuals collected in Peru.

Moraes & al. (2015) proposed $x = 8$ as the ancestral base chromosome number for Iridoideae. According to these authors, the base number $x = 9$ in Sisyrinchieae is a derived condition arising from chromosome rearrangements (ascending dysploidy). For *Sisyrinchium*, at least five base numbers have been found: $x = 5$, 8, 9, 13 and 17 (Goldblatt & Manning, 2008; present work); however, $x = 9$ and $x = 8$ are the most frequent numbers.

Among the 20 taxa here analyzed, 13 from five clades have $x = 9$. Goldblatt & Manning (2008) suggested $x = 9$ as the ancestral number for the genus. The secondary numbers probably arose through dysploidy and polyploidy events, as well interspecific hybridization.

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