



# Chromosome numbers of some vascular plant species from the south of Baikal Siberia

Victor V. Chepinoga<sup>1,2\*</sup>, Aleksandr A. Gnutikov<sup>3</sup>

Victor V. Chepinoga<sup>1,2\*</sup>  
e-mail: victor.chepinoga@gmail.com

Aleksandr A. Gnutikov<sup>3</sup>  
e-mail: alexandr2911@yandex.ru

<sup>1</sup> V.B. Sochava Institute of Geography, SB RAS, Irkutsk, Russia,

<sup>2</sup> Irkutsk State University, Irkutsk, Russia

<sup>3</sup> V.L. Komarov Botanical Institute RAS, St.-Petersburg, Russia

\* Author for correspondence

Manuscript received: 13.08.2013  
Review completed: 12.12.2013  
Accepted for publication: 14.02.2014

## ABSTRACT

Chromosome numbers for 76 vascular plant species from Baikal Siberia are reported. Caryology of two species (*Tragopogon trachycarpus* S.A. Nikitin and *Pedicularis striata* Pall.) was studied for the first time. Also for 5 species it is the first chromosome count on the territory of Russian Federation. For 22 species there are first chromosome counts from Baikal Siberia.

## Keywords

chromosome numbers, vascular plants, Southern Siberia, Baikal Siberia, Baikal region

## РЕЗЮМЕ

**Чепинога В.В., Гнутиков А.А. Хромосомные числа некоторых видов растений юга Байкальской Сибири**

Приводятся хромосомные числа для 76 видов сосудистых растений с территории Байкальской Сибири. Два вида (*Tragopogon trachycarpus* S.A. Nikitin и *Pedicularis striata* Pall.) исследованы впервые. Пять видов впервые исследованы на территории России. Для 22 вида впервые хромосомные числа получены на материале с территории Байкальской Сибири.

## Ключевые слова

хромосомные числа, сосудистые растения, Южная Сибирь, Байкальская Сибирь, Байкальский регион

Baikal Siberia (BS) is a region on the south of the Eastern Siberia. The region includes Irkutsk Oblast', Republic of Buryatia and Zabaikalskii Krai. The chromosome numbers (CN) in vascular plants of the Baikal Siberian flora are being studied during last 90 years. Nowadays, CN are known for 1163 plant species from BS (Chepinoga 2014, in print). This article presents new results on the karyological studies of flora of BS. Chromosome counts were made by A. Gnutikov on the root tips of seedlings grown from seeds obtained in herbarium specimens. Vouchers are deposited in the Herbarium IRKU (Irkutsk).

In the contribution we added also several CN from studied plants found in the Herbarium NSK (Novosibirsk) and remained unpublished. CN were marked on sheets of herbarium. These counts were made by R. Krogulevich and N. Friesen, the collectors of specimens.

The first chromosome count for the species is denoted by (\*); the first chromosome count from BS – by (!).

## APIACEAE

### *Carum buriaticum* Turcz., **2n = 22.**

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 5 km SE of Cheremkhovo village, the shore of the Ingoda River, steppe, 715 m alt., 51°28'N 112°43'E, 11 Aug 2007, coll. V. Chepinoga & I. Enushchenko C1252 (IRKU). The species has stable CN. This is the second CN count from BS (2n = 22, Shner et al. 2008).

## ASCLEPIADACEAE

### *Vincetoxicum sibiricum* (L.) Decne., **2n = 24.**

Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, 15 km SE of Zokto-Khangil village, western shore of the Nozhii Lake, steppe, 649 m alt., 50°49'N 114°47'E, 18 Jul 2008, coll. A. Konovalov & M. Isaikina C1274 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 18 km SSW of Nizhnii Tsassuchei village, steppe lake Bain-Zagan, shore, 662 m alt., 50°20'N 115°06'E, 23 Jul 2008, coll. A. Konovalov C1273 (IRKU). The CN 2n = 24 is known from two other localities in Zabaikalskii Krai (Probatova et al. 2008a; Chepinoga et al. 2012c). However, in the same region the CN 2n = 18 was also revealed (Chepinoga et al. 2012c).

## ASPARAGACEAE

### *Asparagus brachyphyllus* Turcz., **2n = 20.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 10 km N of Soloviovsk village, between Zun-Torei and Barun-Torei lakes, steppe, 593 m alt., 49°58'N 115°43'E, 27 Jul 2008, coll. V. Chepinoga, S. Rosbakh & P. Lubogoschinsky C1226 (IRKU). The CN was already studied in the same region (Chepinoga et al. 2012a; Probatova et al. 2012a). The CN of the species seems to be a constant.

### *Asparagus dauricus* Fisch. ex Link, **2n = 40.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 5 km NW of Borzia town, saline lake Kholbo (Elf-Nur),

steppe, 695 m alt., 50°27'N 116°27'E, 01 Aug 2008, coll. V. Chepinoga, S. Rosbakh & M. Isaikina C1224 (IRKU). The CN for the species from Transbaikalian part of BS are quite numerous (Vlassova 1981; Krogulevich & Rostovtseva 1984; Chepinoga et al. 2012a; Probatova et al. 2012a). The CN  $2n = 20$  ( $2x$ ) is more common one for the species. Though, the CN  $2n = 40$  ( $4x$ ) was already once revealed (Chepinoga et al. 2012a).

#### ASTERACEAE

##### *Aster alpinus* L., $2n = 18$ .

Russia, East Siberia, Buryatia Republic, Mukhorshibirskii Raion, 3 km S of Sagan-Nur village, saline lake Olon-Sheber, steppic meadow, 51°18'N 108°25'E, 05 Aug 2007, coll. I. Enushchenko C1283 (IRKU). The species was studied in Siberia multiple times (e.g., Krogulevich & Rostovtseva 1984). There are two caryological races revealed: diploid ( $2x$ ;  $2n = 18$ ) and tetraploid ( $4x$ ;  $2n = 36$ ). Diploid race is more common in BS.

##### (!) *Cirsium pendulum* Fisch. ex DC., $2n = 34$ .

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 4 km N of Ablatuisckii Bor village, bitterly-salt Selitryanoe Lake, margin of the birch forest, 51°13'N 112°14'E, 09 Aug 2007, coll. I. Enushchenko C1254 (IRKU). The species with stable CN. First count from Siberia.

##### *Crepis sibirica* L., $2n = 10$ .

Russia, East Siberia, Buryatia Republic, Kabanskii Raion, lower course of the Tolbazikha River, next to the road, forest edge, 460 m alt., 51°55'N 106°13'E, 14 Aug 2007, coll. I. Enushchenko C1253 (2 samples) (IRKU). This forest species has stable CN.

##### (!) *Galinsoga ciliata* (Raf.) S.F. Blake, $2n = 32$ .

Russia, East Siberia, Irkutsk city, Akademgorodok, flowerbed near a shopping center, 28 Aug 2008, coll. A. Zaru bin C1230 (IRKU). Adventive species with stable CN. First count from Siberia.

##### (\*) *Tragopogon trachycarpus* S.A. Nikitin, $2n = 12$ .

Russia, East Siberia, Zabaikalskii Krai, Mogoituiskii Raion, 2 km SW of Yasnogorsk town, near the mouth of the Turga River, sandy riverside, 582 m alt., 50°50'N 115°40'E, 12 Jul 2008, coll. V. Chepinoga & S. Rosbakh C1219 (IRKU). It is the first CN count for this dahurian forest-steppe species.

#### BORAGINACEAE

##### (!) *Hackelia deflexa* Opiz, $2n = ca. 22$ .

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 6 km W of the Nizhnii Tsassuchei village, floodplain of right riverside of the Onon River, shrub thickets next to the rocky slope, 663 m alt., 50°31'N 115°02'E, 05 Aug 2008, coll. V. Chepinoga & S. Rosbakh C1218 (IRKU). First CN count from Baikal Siberia.

##### *Lappula anisacantha* (Turcz. ex Bunge) Gürke, $2n = 24$ .

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 17 km SW of Borzia town, steppe, roadside, 673 m alt., 50°17'N 116°20'E, 01 Aug 2008, coll. V. Chepinoga & S. Ros-

bakh C1215 (IRKU). The species has stable CN. It was already studied in BS (Krivenko et al. 2012; Probatova et al. 2012b).

##### *Lappula squarrosa* Dumort., $2n = 48$ .

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, vicinity Soloviovsk village, roadside, 608 m alt., 49°53'N 115°45'E, 29 Jul 2008, coll. V. Chepinoga, S. Rosbakh & A. Kononov C1214 (IRKU). The species has stable CN. This is the second CN count from BS ( $2n = 48$ , Krivenko et al. 2012).

#### BRASSICACEAE

*Dontostemon pinnatifidus* (Willd.) Al-Shehbaz et H. Ohba,  $2n = 14$ .

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 2 km S of Shelokhan village, left riverside of Ingoda river, pebble bank, 818 m alt., 51°00'N 111°56'E, 07 Aug 2007, coll. I. Enushchenko C1248 (IRKU). The species has stable CN. Earlier it was studied in BS in Irkutsk Oblast' (Probatova et al. 2008a; Krivenko et al. 2012).

##### (!) *Lepidium apetalum* Willd., $2n = 32$ .

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 15 km W of Ust'-Imalka village, saline lake Bulun-Zagan (Sataninskoie), on shore, 653 m alt., 50°07'N 115°06'E, 25 Jul 2008, coll. V. Chepinoga C1220 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 13 km S of Bolshevik village, saline lake Tsagan-Nur, on shore, 651 m alt., 50°22'N 114°43'E, 04 Jul 2008, coll. V. Chepinoga C1221 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 12 km N of Soloviovsk village, between lakes Zun-Torei and Barun-Torei, cordon "Utochi" of Dahurian nature reserve, near a house, 595 m alt., 50°00'N 115°43'E, 27 Jul 2008, coll. M. Isaikina & N. Pazdnikova C1222 (IRKU). The species is caryologically hardly investigated. These are the first CN counts from Russian Federation.

##### *Rorippa barbareaifolia* (DC.) Kitag., $2n = 16$ .

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 2 km S of Shelokhan village, left riverside of Ingoda river, pebble, 818 m alt., 51°00'N 111°56'E, 07 Aug 2007, coll. V. Chepinoga C1249 (IRKU). The species was earlier studied in BS. Two caryological races are revealed: diploid ( $2x$ ;  $2n = 16$ , Belaeva & Siplivinsky 1976) and tetraploid ( $4x$ ;  $2n = 32$ , Chepinoga et al., 2010b).

##### *Thlaspi arvense* L., $2n = 14$ .

Russia, East Siberia, Irkutskaya Oblast', Tulunskii Raion, 6 km SSW of Ikei village, left riverside of Ikei river (left tributary of the Ija river), meadow, 03 Jul 1999, coll. V. Chepinoga, A. Chepinoga & E. Sorokovikova C47 (IRKU). The species has stable CN. This is the second CN count from BS ( $2n = 14$ , Chepinoga et al., 2010b).

#### CAMPANULACEAE

##### *Campanula glomerata* L., $2n = 34$ .

East Sayan Mts., Tunkinskii Ridge, Ula-Gol River, alpine belt, turf-covered slope, 2000 m alt., 26 Jul 1976, R. Krogulevich No 64 (NSK). The sample we found in the Herbarium NSK, was missed in R. Krogulevich's article (Krogulevich 1978), where the only sample from Tubota River was cited. The CN  $2n = 34$  as well as  $2n = 30$  are common for the species.

## CARYOPHYLLACEAE

(!) *Eremogone juncea* (M. Bieb.) Fenzl (*Arenaria juncea* M. Bieb.), **2n = 22**.

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 17 km W of Sherlovaya Gora town, central part of Adon-Chelon mountain-steppe massif, rocks, 954 m alt., 50°31'N 116°06'E, 02 Aug 2008, coll. V. Chepinoga et al. C1211 (IRKU). The species has stable CN. This is the first CN count from Siberia.

## CHENOPODIACEAE

*Atriplex sibirica* L., **2n = 18**.

Russia, East Siberia, Buryatia Republic, Mukhorshibirskii Raion, 3 km S of Zagan-Nur village, saline lake Olon-Sheber, steppe meadow, 51°18'N 108°25'E, 05 Aug 2007, coll. V. Chepinoga C1250 (2 samples) (IRKU). The species has stable CN. It was earlier studied in BS (Lomonosova & Krasnikov 2006; Lomonosova 2012).

*Chenopodium aristatum* L., **2n = 18**.

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 5 km NW of Borzia town, saline lake Kholbo (Elf-Nur), sedge meadow, 695 m alt., 50°27'N 116°27'E, 01 Aug 2008, coll. V. Chepinoga, S. Rosbakh & M. Isaikina C1258 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 5 km WNW of Drovyanaya township, floodplain on right riverside of the Ingoda River, vicinity the oxbow Strelolistovoe, dry meadow, 693 m alt., 51°36'N 112°58'E, 07 Aug 2008, coll. V. Chepinoga, S. Rosbakh & P. Lubogoschinsky C1259 (IRKU). The species has stable CN. Earlier, it was studied in BS (Belaeva & Siplivinsky 1981; Probatova et al. 2008a, 2009).

(!) *Chenopodium hybridum* L., **2n = 18**.

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 17 km W of Sherlovaya Gora town, central part of Adon-Chelon mountain-steppe massif, rocks, 954 m alt., 50°31'N 116°06'E, 02 Aug 2008, coll. V. Chepinoga et al. C1257 (IRKU). The species has stable CN. First CN count from BS.

(!) *Chenopodium karoii* (Murr) Aellen, **2n = 36**.

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 2 km N of Cheremkhovo village, steppe lake Nympehnikovoe, on shore, 725 m alt., 51°28'N 112°43'E, 07 Aug 2008, coll. V. Chepinoga, S. Rosbakh & P. Lubogoschinsky C1241 (IRKU). The species has stable CN. First CN count from BS.

## CYPERACEAE

(!) *Carex diandra* Schrank, **2n = 60**.

Russia, East Siberia, Irkutskaya Oblast', Tulunskii Raion, southern outskirts of the Perfilovo village, shore of Sheragol river (left tributary of the Manut River), 21 Jul 2006, coll. V. Chepinoga & A. Gnutikov C306 (3 samples) (IRKU). This is the first CN count for this marsh species from Siberia.

*Carex reptabunda* (Trautv.) V.I. Krecz., **2n = 44**.

Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, 15 km SE of Zokto-Khangil village, western shore of the Nozhii Lake, sedge meadow, 649 m alt., 50°49'N 114°47'E, 18 Jul 2008, coll. V. Chepinoga C1227 (IRKU). The wet

meadow species was once studied in BS (2n = 44, Chepinoga et al. 2009).

*Carex vesicata* Meinsh., **2n = 54**.

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 2 km S of Shelokhan village, Ingoda river, depth 40 cm, 818 m alt., 51°00'N 111°56'E, 07 Aug 2007, coll. V. Chepinoga C1244 (IRKU). This marsh species was already once studied in BS (2n = 54, Chepinoga et al. 2009).

*Eleocharis palustris* (L.) Roem. et Schult., **2n = 16**.

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 5 km WNW of Drovyanaya township, floodplain on right riverside of the Ingoda River, oxbow Osokovoe, on shore, 693 m alt., 51°36'N 112°58'E, 13 Aug 2007, coll. V. Chepinoga C1243 (IRKU). Diploid species with stable CN. It was earlier studied in BS several times (Belaeva & Siplivinsky 1975a; Chepinoga et al. 2008a, 2009, 2012b).

(!) *Eleocharis uniglumis* (Link) Schult., **2n = 46-48**.

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 4 km N of Ablatuiskii Bor village, bitterly-salt Selitryanoe Lake, saline meadow, 51°13'N 112°14'E, 09 Aug 2007, coll. V. Chepinoga C1242 (IRKU).

–, **2n = 46**.

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 4 km N of Ablatuiskii Bor village, bitterly-salt Selitryanoe Lake, saline meadow, 51°13'N 112°14'E, 09 Aug 2007, coll. V. Chepinoga C1256 (IRKU). First CN count from Siberia.

## FABACEAE

*Astragalus membranaceus* Moench, **2n = 16**.

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 14 km W of Sherlovaya Gora town, southern part of Adon-Chelon mountain-steppe massif, on steppe slope, 779 m alt., 50°31'N 116°10'E, 01 Aug 2008, coll. N. Pazdnikova C1238 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 14 km W of Sherlovaya Gora town, southern part of Adon-Chelon mountain-steppe massif, on steppe slope, 779 m alt., 50°31'N 116°10'E, 01 Aug 2008, coll. A. Kononov C1239 (IRKU). The species has stable CN. It was already twice studied in BS (Krogulevich 1971; Belaeva & Siplivinsky 1975a).

(!) *Caragana microphylla* Lam., **2n = 16**.

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, Soloviovsk village, roadside, 608 m alt., 49°53'N 115°45'E, 29 Jul 2008, coll. V. Chepinoga, S. Rosbakh & A. Kononov C1261 (2 samples) (IRKU); Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 7 km E of Lakha village, southern part of Adon-Chelon mountain-steppe massif, feather grass steppe, 853 m alt., 50°28'N 116°03'E, 03 Aug 2008, coll. S. Rosbakh et al. C1260 (IRKU). The species with constant CN. It is the first CN count for this steppe species from Russian Federation.

(!) *Lathyrus pisiformis* L., **2n = 14**.

Russia, East Siberia, Irkutskaya Oblast', Tulunskii Raion, vicinity the Tulun State Breeding Station, mixed forest, 27 Jul 1995, coll. V. Chepinoga C032 (IRKU). The species has stable CN. First CN count from Russian Federation.

**(!) *Oxytropis leptophylla* (Pall.) DC., 2n = 16.**

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 17 km S of Kubukhai village, saline lake Ukshinda, feather grass steppe, 655 m alt., 50°20'N 114°49'E, 06 Jul 2008, coll. A. Konovalov & M. Isaikina C1266 (IRKU). The species has stable CN. First CN count from Russian Federation.

**(!) *O. oxyphylla* (Pall.) DC., 2n = 16.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 10 km N of Soloviovsk village, between Zun-Torei and Barun-Torei lakes, steppe, 593 m alt., 49°58'N 115°43'E, 27 Jul 2008, coll. M. Isaikina, K. Fleckenstein & N. Pazdnikova C1267 (IRKU). The species has stable CN. First count from BS.

***Vicia sepium* L., 2n = 14.**

Russia, East Siberia, Buryatia Republic, Kabanskii Raion, lower course of Tolbasikha river, forest edge, in shrubs, 460 m alt., 51°55'N 106°13'E, 14 Aug 2007, coll. I. Enushchenko C1247 (IRKU). The species has stable CN. Earlier, it was several times studied in BS (Belaeva & Siplivinsky 1976; Nikiforova 1984; Chepinoga et al. 2012d; Probatova et al. 2012a).

**GERANIACEAE*****Geranium sibiricum* L., 2n = 28.**

Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, 15 km SE of Zokto-Khangil village, western shore of the Nozhii Lake, steppe, 649 m alt., 50°49'N 114°47'E, 18 Jul 2008, coll. A. Konovalov & M. Isaikina C1279 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 7 km E of Lakha village, southern part of Adon-Chelon mountain-steppe massif, on rocks in shadow, 853 m alt., 50°28'N 116°03'E, 03 Aug 2008, coll. S. Rosbakh et al. C1280 (IRKU). The species has stable CN. Earlier, it was studied in BS in Irkutsk Oblast' (Chepinoga et al. 2010b, 2012d).

**JUNCACEAE*****Luzula sibirica* (V.I. Krecz.) V.I. Krecz., 2n = 24.**

Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, foothills of Khamar-Daban Mts., 7 km S of Baikal Lake, middle course of Osinovka Tankhoiskaya River, brook bank, 575 m alt., 51°30'N 105°07'E, 13 Jul 2009, coll. R. Moriz C1064 (IRKU). There is only one known CN count for this species. The count was made in BS in Irkutsk Oblast' (2n = 24, Belaeva & Siplivinsky 1976).

**LAMIACEAE****(!) *Scutellaria baicalensis* Georgi, 2n = 32.**

Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, 15 km SE of Zokto-Khangil village, western shore of the Nozhii Lake, steppe, 649 m alt., 50°49'N 114°47'E, 18 Jul 2008, coll. A. Konovalov & M. Isaikina C1276 (IRKU). The species is a stable tetraploid (4x; 2n = 32). The species was studied only in Russian Far East (Probatova & Sokovskaya 1990; Shatokhina 2006). This is the first CN count from Siberia.

**LINACEAE*****Linum baicalense* Juz. 2n = 18.**

Russia, East Siberia, Zabaikalskii Krai, Olovyaninskii Raion, 3 km NW of Yasnaya village, floodplain of Turga

river, meadow, 595 m alt., 50°50'N 115°45'E, 13 Jul 2008, coll. A. Konovalov & M. Isaikina C1282 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 10 km N of Soloviovsk village, between Zun-Torei and Barun-Torei lakes, steppe, 593 m alt., 49°58'N 115°43'E, 27 Jul 2008, coll. V. Chepinoga, S. Rosbakh & P. Lubogoschinsky C1281 (IRKU). This endemic for BS species was earlier once studied from shore of the Lake Baikal (2n = 18, Belaeva & Siplivinsky 1977).

**MENISPERMACEAE****(!) *Menispermum dauricum* DC., 2n = 52.**

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 6 km W of the Nizhnii Tsassuchei village, floodplain of right riverside of the Onon River, shrub thickets next to the rocky slope, 663 m alt., 50°31'N 115°02'E, 05 Aug 2008, coll. V. Chepinoga & S. Rosbakh C1272 (IRKU). First CN count from territory of Russian Federation.

**ONAGRACEAE*****Chamaenerion latifolium* (L.) Franch et Lange, 2n = 72.**

Russia, East Siberia, Irkutskaya Oblast', Sludyanskii Raion, foothills of Khamar-Daban Mts., 7 km S of Baikal Lake, lower course of Snezhnaya River, left riverside, sandy-gravel bank, 484 m alt., 51°24'N 104°38'E, 29 Jun 2009, coll. R. Moriz & A. Sergeeva C922 (IRKU). The CN 2n = 72 is a most common for the species. It is known already from BS (Krogulevich 1978). Though, another CN (2n = 36) was also revealed (Krogulevich 1971; Belaeva & Siplivinsky 1976; Probatova et al. 2011).

**PLANTAGINACEAE*****Plantago depressa* Willd., 2n = 12.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 10 km N of Soloviovsk village, between lakes Zun-Torei and Barun-Torei, vicinity the cordon "Utochi" of Dahurian nature reserve, saz steppe, 593 m alt., 49°58'N 115°43'E, 27 Jul 2008, coll. V. Chepinoga, S. Rosbakh & P. Lubogoschinsky C1270 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, Nikolaevskoe village, vicinity the lake Nikolaevskoe, pine forest, 51°03'N 111°44'E, 08 Aug 2007, coll. I. Enushchenko & Ch. Stumpf-Therre C1246 (IRKU). The species has stable CN. It was already studied in BS (Krogulevich 1978; Malakhova & Kurbatsky 1995; Probatova et al., 2011; Chepinoga et al. 2012b).

**POACEAE*****Agrostis clavata* Trin., 2n = 42.**

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 6 km W of the Nizhnii Tsassuchei village, floodplain of right riverside of the Onon River, oxbow shore, 663 m alt., 50°31'N 115°02'E, 05 Aug 2008, coll. V. Chepinoga & S. Rosbakh C1206 (IRKU). The stable hexaploid (6x) species. Earlier, it was already studied in BS (Belaeva & Siplivinsky 1977; Chepinoga et al. 2008a, 2012b; Probatova et al. 2011, 2012b).

***Agrostis divaricatissima* Mez, 2n = 28.**

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 6 km W of the Nizhnii Tsassuchei village, floodplain of

right riverside of the Onon River, oxbow near from the road, shallow water, 663 m alt., 50°31'N 115°02'E, 05 Aug 2008, coll. V. Chepinoga & S. Rosbakh C1207 (IRKU). The species with stable CN. Earlier, it was already studied in BS (Chepinoga et al. 2010a, 2010b; Probatova et al. 2012b).

***Bromopsis pumpelliana* (Scribn.) Holub, 2n = 56.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 7 km E of Lakha village, southern part of Adon-Chelon mountain-steppe massif, feather grass steppe, 853 m alt., 50°28'N 116°03'E, 03 Aug 2008, coll. S. Rosbakh et al. C1203 (IRKU). The species is very polymorphic, also in CH. From BS the only most common CN 2n = 56 is known (Belaeva & Siplivinsky 1975a; Chepinoga et al. 2008b).

**(!) *Cleistogenes squarrosa* (Trin. ex Ledeb.) Keng, 2n = 40.**

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 4 km WNW of Droyvanaya township, floodplain on right riverside of the Ingoda River, vicinity the oxbow Krivoje, roadside, 654 m alt., 51°35'N 112°59'E, 07 Aug 2008, coll. V. Chepinoga, S. Rosbakh & P. Lubogoschinsky C1209 (IRKU). The species is studied for the first time.

***Elymus pendulinus* (Nevski) Tzvelev, 2n = 28.**

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 6 km W of the Nizhnii Tsassuchei village, floodplain of right riverside of the Onon River, shrub thickets next to the rocky slope, 663 m alt., 50°31'N 115°02'E, 05 Aug 2008, coll. V. Chepinoga & S. Rosbakh C1204 (2 samples) (IRKU). The species has stable CN. Earlier, it was once studied in BS (Chepinoga et al. 2008b).

***Elymus sibiricus* L. 2n = 28.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 10 km NE of Durbachi village, roadside, 703 m alt., 50°08'N 116°12'E, 31 Jul 2008, coll. V. Chepinoga, S. Rosbakh & N. Pazdnikova C1235 (IRKU). The species with stable CN. It was studied in BS several times (Belaeva & Siplivinsky 1975; Chepinoga et al. 2008b; Probatova & Seledets 2008; Probatova et al. 2011).

***Eragrostis pilosa* (L.) P. Beauv., 2n = 40.**

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 4 km WNW of Droyvanaya township, floodplain on right riverside of the Ingoda River, vicinity the oxbow Krivoje, roadside, 654 m alt., 51°35'N 112°59'E, 07 Aug 2008, coll. V. Chepinoga, S. Rosbakh & P. Lubogoschinsky C1201 (2 samples) (IRKU). Earlier, this species was once studied in BS (2n = 40, Chepinoga et al. 2008b).

***Glyceria triflora* (Korsh.) Kom., 2n = 20.**

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 2 km S of Shelokhan village, left riverside of Ingoda river, thickets in shallow water, 818 m alt., 51°00'N 111°56'E, 07 Aug 2007, coll. V. Chepinoga C1245 (IRKU). The species with stable CN. It was studied in BS a number times (Belaeva & Siplivinsky 1976, 1977; Probatova et al. 2008a; Chepinoga et al. 2008b, 2012b).

***Hordeum roshevitzii* Bowden, 2n = 14.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 28 km SW of Borzia town, saline lake Babie, sedge meadow on shore, 643 m alt., 50°12'N 116°15'E, 01 Aug

2008, coll. V. Chepinoga & S. Rosbakh C1234 (IRKU). The species with stable CN. This is the second CN count from BS (Chepinoga et al. 2012a).

***Panicum miliaceum* L., 2n = 36.**

Russia, East Siberia, Irkutskaya Oblast', Shelekhovskii Raion, Bolshoi Lug village, railway embankment, 18 Jul 2008, coll. A. Zarubin C1232 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, 8 km W of Gunei village, left riverside of the Onon River, oxbow lake Krivoje, on shore, 655 m alt., 50°30'N 114°25'E, 17 Jul 2008, coll. A. Konovalov & M. Isaikina C1236 (2 samples) (IRKU). Earlier, this species was once studied in BS in Zabaikalskii Krai (2n = 36, Chepinoga et al. 2012c).

***Panicum ruderule* (Kitag.) D.M. Chang, 2n = 36.**

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 5 km S of Krasnaya Imalka, saline lake Ara-Torom, feather grass steppe, roadside, 618 m alt., 50°12'N 115°17'E, 25 Jul 2008, coll. V. Chepinoga & N. Pazdnikova C1263 (IRKU). The CN 2n = 36 is known from Irkutsk Oblast' and Buriatia (Probatova et al. 2009, 2012b). However, the CN 2n = 18 was also revealed from in Irkutsk Oblast' (Chepinoga et al. 2010b).

***Poa pratensis* L., 2n = 56.**

Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, vicinity the township Orlovskii, shore of the quarry lake, 788 m alt., 51°02'N 114°50'E, 20 Jul 2008, coll. V. Chepinoga, S. Rosbakh & A. Konovalov C1233 (IRKU). It is a morphologically and caryologically polymorphic species. There are known only CN 2n = 56 (8x) from BS (Chepinoga et al. 2008b; Probatova et al. 2008b, 2012b).

***Poa stepposa* (Krylov) Roshev., 2n = 42.**

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 10 km SW of Byrka village, nearby the road Byrka-Nizhnii Tsassuchei, feather grass steppe, 655 m alt., 50°41'N 115°52'E, 30 Jun 2008, coll. M. Isaikina C1202 (2 samples) (IRKU); Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, Nizhnii Tsassuchei village, roadside, 647 m alt., 50°30'N 115°06'E, 01 Jul 2008, coll. V. Chepinoga & M. Isaikina C1208 (IRKU). This stable hexaploid (6x; 2n = 42) species was already studied in BS (Chepinoga et al. 2012c).

***Puccinellia macranthera* (V.I. Krecz.) Norl., 2n = 28.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 5 km NW of Borzia town, saline lake Kholbo (Elf-Nur), meadow, 695 m alt., 50°27'N 116°27'E, 30 Jun 2008, coll. A. Konovalov & M. Isaikina C1262 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 17 km ESE of Ust'-Borzia village, saline lake Ekhe-Zagan-Nor, on shore, 649 m alt., 50°33'N 115°52'E, 10 Jul 2008, coll. V. Chepinoga & S. Rosbakh C1265 (IRKU). The CN 2n = 28 (4x) for this species was several time revealed from BS (Chepinoga et al. 2008b, 2012b). Besides this, the CN 2n = 56 (8x) is also known from the region (Probatova et al. 2009).

***Puccinellia tenuiflora* (Griseb.) Scribn. et Merr., 2n = 28.**

Russia, East Siberia, Zabaikalskii Krai, Ononskii Raion, 17 km ESE of Ust'-Borzia village, saline lake Ekhe-Zagan-Nor, on shore, 649 m alt., 50°33'N 115°52'E, 10 Jul 2008, coll. V.

Chepinoga & S. Rosbakh C1264 (IRKU). The found tetraploid CN  $2n = 28$  ( $4x$ ) for this species was already twice revealed in BS (Probatova et al. 2009; Chepinoga et al. 2010a). While the diploid CN  $2n = 14$  ( $2x$ ) is more common (Chepinoga et al. 2010a, 2012b; Probatova et al. 2011).

***Stipa baicalensis* Roshev.,  $2n = 44$ .**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 17 km W of Sherlovaya Gora town, central part of Adon-Chelon mountain-steppe massif, forb steppe, 954 m alt.,  $50^{\circ}31'N$   $116^{\circ}06'E$ , 02 Aug 2008, coll. V. Chepinoga et al. C1205 (3 samples) (IRKU). The species was once studied in Russian Far East ( $2n = 44$ , Probatova et al. 2006) and once in Transbaikalia without specifying the location ( $2n = 48$ , Guzik & Levkovskii 1979).

***Tripogon chinensis* (Franch.) Hack.,  $2n = 20$ .**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 17 km W of Sherlovaya Gora town, central part of Adon-Chelon mountain-steppe massif, rocks, 954 m alt.,  $50^{\circ}31'N$   $116^{\circ}06'E$ , 02 Aug 2008, coll. V. Chepinoga et al. C1237 (3 samples) (IRKU). The species has stable CN. Earlier, CN for this species was published from the same location ( $2n = 20$ , Probatova et al. 2011).

## POLYGONACEAE

***Fallopia convolvulus* (L.) Á. Löve,  $2n = 40$ .**

Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, 8 km W of Gunei village, left riverside of the Onon River, oxbow lake Krivoye, on shore, 655 m alt.,  $50^{\circ}30'N$   $114^{\circ}25'E$ , 17 Jul 2008, coll. A. Konovalov & M. Isaikina C1269 (IRKU). The species with constant CN. Earlier, it has been once studied in BS ( $2n = 40$ ; Chepinoga et al. 2010a).

***Persicaria lapathifolia* (L.) Delarbre,  $2n = 22$ .**

Russia, East Siberia, Irkutskaya Oblast', Shelekhovskii Raion, right riverside of Irkut River, in front of the Pionersk village, sandy-pebble beach, 04 Sep 2005, coll. S. Rosbakh & N. Dulepova C1228 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, Tanga village, the Lake Tanginskoe, on shore, 878 m alt.,  $50^{\circ}58'N$   $111^{\circ}33'E$ , 06 Aug 2007, coll. V. Chepinoga C1212 (IRKU); Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, Nikolaevskoe village, the moist shore of Nikolaevskoe lake, moist roadside,  $51^{\circ}03'N$   $111^{\circ}46'E$ , 08 Aug 2007, coll. V. Chepinoga & Ch. Stumpf-Therre C1213 (IRKU). The CN  $2n = 22$  is most common one for the species. This is the second CN count from BS ( $2n = 22$ , Chepinoga et al. 2008a).

***Rheum rhabarbarum* L.,  $2n = 44$ .**

Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, 15 km SE of Zokto-Khangil village, eastern shore of the Nozhii Lake, steppe slope, scree, 693 m alt.,  $50^{\circ}49'N$   $114^{\circ}50'E$ , 19 Jul 2008, coll. S. Rosbakh, A. Konovalov & M. Isaikina C1268 (IRKU). Apparently, it is the stable tetraploid ( $4x$ ;  $2n = 44$ ) species. Earlier it was twice studied in BS (Krogulevich 1978; Chepinoga et al. 2012b).

## RANUNCULACEAE

***Caltha crenata* Belyaeva et Sipliv.,  $2n = >100$ .**

[Irkutskaya Oblast'], Olkhonskii Raion, shore of Lake Baikal, on the bank of Sarma river, 30 Jun 1986, N. Friesen №1065

(NSK). This endemic for Siberia species was studied several times on the eastern coast of Lake Baikal ( $2n = 120$ , Belaeva & Siplivinsky 1975b, 1976, 1981). The CN count we found in the Herbarium NSK is the first one on western coast of the lake.

***Caltha membranacea* (Turcz.) Schipcz.,  $2n = 32$ .**

Irkutskaya Oblast', Baikal Lake, Primorskii Ridge, Trekhgolovii Goletz Mt., in the source of the Ilikta River, along bank, 04 Jul 1986, N. Friesen №1119 (NSK). The CN  $2n = 32$  is the most common CN for the species revealed numerous times in BS (Krogulevich 1971; Belaeva & Siplivinsky 1975a, 1976b, 1976, 1977, 1981; Chepinoga et al. 2010b, 2012b). However, the CN  $2n = 56$  was also revealed in the region (Belaeva & Siplivinsky 1977).

**(!) *Clematis hexapetala* Pall.,  $2n = 16$ .**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 17 km SW of Borzia town, steppe, roadside, 673 m alt.,  $50^{\circ}17'N$   $116^{\circ}20'E$ , 01 Aug 2008, coll. V. Chepinoga & S. Rosbakh C1223 (IRKU). The species with constant CN. First count in BS.

**(!) *Pulsatilla dahurica* (Fisch. ex DC.) Spreng.,  $2n = 16$ .**

Russia, East Siberia, Zabaikalskii Krai, Khilokskii Raion, 6 km S of Linevo Ozero village, embankment of Moscow tract,  $51^{\circ}17'N$   $110^{\circ}40'E$ , 23 Jun 2008, coll. S. Rosbakh C1225 (IRKU). The species with constant CN. First count in BS.

***Ranunculus sceleratus* L.,  $2n = 64$ .**

Russia, East Siberia, Irkutsk city, vicinity the bus stop "Uzlovaya", Novo-Lenino wetlands, shore of a lake, 15 Jul 2009, coll. A. Zarubin C1229 (2 samples) (IRKU). There are known several CN for this polymorphic species:  $2n = 16, 32, 56, 64$  etc. The CN  $2n = 64$  ( $6x$ ) is a most common in BS (Belaeva & Siplivinsky 1976; Probatova et al. 2008a, 2012a; Chepinoga et al. 2009, 2012b).

**(!) *Thalictrum baicalense* Turcz. ex Ledeb.,  $2n = 14$ .**

Russia, East Siberia, Irkutskaya Oblast', Chermkhovskii Raion, 8 km E of Talniki village, left riverside of the Malaya Belaya river, Bolshoi Berezovyi island, shore of an oxbow, 19 Jul 2003, coll. V. Chepinoga & A. Verkhovina C011 (IRKU);

**—  $2n = 14$ .**

Russia, East Siberia, Irkutskaya Oblast', Shelekhovskii Raion, left riverside of Irkut River, oxbow Baushevo nearby Pionersk village, edge of birch-forest, 04 Jul 2004, coll. V. Chepinoga, I. Enushchenko & N. Dulepova C074 (IRKU). The species with constant CN. First count in BS.

***Trollius asiaticus* L.,  $2n = 32$ .**

Buryatia Republic, Khamar-Daban Mts., upper course of Mysovaya River, wet meadow along the riverbank, 01 Aug 1987, N. Friesen №1748 (NSK); Buryatia Republic, Lake Baikal, Svyatoi Nos peninsula, Chivirkuisii bay, vicinity of Katun' village, aspen forest with forbs, 28 Jun 1987, N. Friesen, Aksenov № 98 (NSK). So far, the *Trollius* species are known as stable diploids with CN  $2n = 16$  ( $2x$ ) (eg., Agapova et al. 1990). These two samples of *T. asiaticus* we found in the Herbarium NSK. Both of them were not published by N. Friesen, apparently because of strange CN. We consider, that two samples with CN  $2n = 32$  persuasively show that polyploidy happens within *Trollius* species.

## ROSACEAE

***Chamaerhodos erecta* (L.) Bunge, 2n = 14.**

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 8 km SW of Tataurovo village, left riverside of Ingoda river, steppe slope, 709 m alt., 51°32'N 112°50'E, 12 Aug 2007, coll. I. Enushchenko & A. Gnutikov C1255 (IRKU). The species is a stable diploid (2x; 2n = 14). It was already studied in BS (Chepinoga et al. 2012b; Probatova et al. 2012a).

***Potentilla paradoxa* Nutt., 2n = 28.**

Russia, East Siberia, Zabaikalskii Krai, Mogoituiskii Raion, 6 km NE Kusocha village, floodplain of right riverside of Onon River, lake Karierno, on shore, 571 m alt., 50°44'N 115°42'E, 14 Jul 2008, coll. V. Chepinoga & S. Rosbakh C1277 (IRKU). There are two CN known for the species: 2n = 28 and 2n = 42. The CN 2n = 28 is a most common in BS (Belaeva & Siplivinsky 1976; Probatova et al. 2011, 2012a; Chepinoga et al. 2012b).

***Potentilla semiglabra* Juz., 2n = 56.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 7 km E of Lakha village, southern part of Adon-Chelon mountain-steppe massif, feather grass steppe, 853 m alt., 50°28'N 116°03'E, 03 Aug 2008, coll. V. Chepinoga C1278 (IRKU). The species with stable CN. This is the second CN count from BS (2n = 56, Chepinoga et al. 2012b).

## RUBIACEAE

**(!) *Galium vaillantii* DC., 2n = 22.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 17 km W of Sherlovaya Gora town, central part of Adon-Chelon mountain-steppe massif, rocks, 879 m alt., 50°28'N 116°04'E, 02 Aug 2008, coll. V. Chepinoga et al. C1271 (IRKU). The species with stable CN. First count from Siberia.

## SCHEUCHZERIACEAE

***Scheuchzeria palustris* L., 2n = 22.**

Russia, East Siberia, Irkutskaya Oblast', Ussolskii Raion, vicinity the Taliany village, left riverside of Toisuk river, swamp Paukhtinskoe, 05 Aug 2004, coll. A. Prudnikova & A. Chudinov C1210 (IRKU). The species with stable CN. This is the second CN count from BS (2n = 22, Belaeva & Siplivinsky 1975a).

## SCROPHULARIACEAE

**(!) *Pedicularis karoii* Freyn, 2n = 16.**

Russia, East Siberia, Zabaikalskii Krai, Uletovskii Raion, 2 km S of Shelokhan village, left riverside of Ingoda river, willow thickets along the bank, 818 m alt., 51°00'N 111°56'E, 07 Aug 2007, coll. I. Enushchenko C1251 (IRKU). The species with stable CN. First count in BS.

**(\*) *Pedicularis striata* Pall., 2n = 16.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 10 km NE of Durbachi village, steppe, 703 m alt., 50°08'N 116°12'E, 31 Jul 2008, coll. V. Chepinoga, S. Rosbakh & N. Pazdnikova C1275 (IRKU). It is the first CN count for this East Asian forest-steppe species.

## URTICACEAE

**(!) *Parietaria micrantha* Ledeb., 2n = 26.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 17 km W of Sherlovaya Gora town, central part of Adon-Chelon mountain-steppe massif, rocky crevice, in shadow, 954 m alt., 50°31'N 116°06'E, 02 Aug 2008, coll. V. Chepinoga et al. C1240 (4 samples) (IRKU). There is only one CN count for the species from Russian Far East (2n = 26, Probatova et al. 2006).

## VALERIANACEAE

***Patrinia rupestris* (Pall.) Juss., 2n = 22.**

Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 20 km SWW of Sherlovaya Gora town, southern part of Adon-Chelon mountain-steppe massif, rocks, 879 m alt., 50°28'N 116°04'E, 02 Aug 2008, coll. V. Chepinoga et al. C1231 (2 samples) (IRKU). The species with stable CN. Earlier, it was twice studied in BS (2n = 22, Belaeva & Siplivinsky 1981; Chepinoga et al. 2012c).

## ACKNOWLEDGEMENTS

The study was financially supported by Russian Fund for Basic Research (grants no. 11-04-00240-a, 12-04-31524, 12-04-01586 and 14-04-00771).

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