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Chromosome Numbers for Vascular Plant from Sakhalin, Moneron and the Kuril Islands (North-East Asia)

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ABSTRACT

Chromosome counts were made for 34 plant species from Sakhalin, Moneron and the Kuril Islands, including: 9 species of *Brassicaceae,* 6 species of *Asteraceae,* 5 species of *Poaceae,* 4 species of *Rosaceae,* 3 species of *Polygonaceae,* 2 species of *Caryophyllaceae* and one each for *Araceae, Ericaceae, Fabaceae, Hemerocallidaceae, Ranunculaceae.* First chromosome information for *Pulsatilla taraoi* (Makino) Takeda ex Zam. et Paegle and *Arctopoa alexeji* (Sofeikova et Worosch.) Probat. is given. New cytotypes for *Artemisia montana* (Nakai) Pamp., *Taraxacum shikotanense* Kitam., *Draba sachalinensis* (Fr. Schmidt) Trautv. were revealed. *Festuca hondoensis, Silene dichotoma* Ehrh., *Artemisia montana* were studied in Russia for the first time. For some species from the Kurils first chromosome data are obtained.

Keywords:
chromosome numbers, vascular plants, flora, Sakhalin, Moneron, Kuril Islands, Russian Far East, NE Asia

Пробатова Н.С., Баркалов В.Ю., Рудыка Э.Г. Хромосомные числа сосудистых растений с Сахалина, Монерона и Курильских островов (северо-восточная Азия)

Приводятся новые определения чисел хромосом для 34 видов сосудистых растений с Сахалина, Монерона и Курильских островов из семейств: *Brassicaceae* (9 видов), *Asteraceae* (6), *Poaceae* (5), *Rosaceae* (4), *Polygonaceae* (3), *Caryophyllaceae* (2) и по одному виду из семейств *Araceae, Ericaceae, Fabaceae, Hemerocallidaceae, Ranunculaceae.* Впервые исследованы *Pulsatilla taraoi* (Makino) Takeda ex Zam. et Paegle and *Arctopoa alexeji* (Sofeikova et Worosch.) Probat., новые цитотипы выявлены у *Artemisia montana* (Nakai) Pamp., *Taraxacum shikotanense* Kitam., *Draba sachalinensis* (Fr. Schmidt) Trautv. Впервые для России исследованы *Festuca hondoensis* (Ohwi) Ohwi, *Silene dichotoma* Ehrh., *Artemisia montana.* Ряд видов впервые изучен на Курилах.

Ключевые слова:
числа хромосом, сосудистые растения, флора, Байкальский регион, Южная Сибирь, Россия

In addition to chromosome information published in the book entitled "Caryology of the flora of Sakhalin and the Kurile Islands" (Probatova et al. 2007) and later – in Additions (1) (Probatova et al. 2009), somatic chromosome counts were made for 33 vascular plant species (26 genera, 11 families) from Sakhalin, Moneron and the Kuril Islands.

Chromosome counts were performed by E.G. Rudyka, on squashed preparations of root tips fixed with Carnoy's solution. These root tips were taken from seedlings grown from seeds obtained in herbarium specimens, which were collected in the field by V.Y. Barkalov. Preparations were stained with iron hematoxylin. Voucher specimens are preserved in the Herbarium VLA, Vladivostok. The plants were identified by Barkalov. The paper, including annotations, as well as English translation, was prepared by N.S. Probatova. First counts are indicated with an asterisk (*), introduced (alien) species – with (+). The plant names and geographical distribution of the species studied are given below according to the "Vascular Plants of the Soviet Far East" (Kharkevich 1985-1996), S.K. Cherepanov (2007), and "Flora of the Russian Far East. Addenda et corrigenda ..." (Kozhevnikov & Probatova 2006).

ARACEAE

Arisaema japonicum Blume (*A. peninsulae* auct.), **2n = 28.**

VLA 10950, Kurils, Shikotan Island, Tserkovnaya Bay, *Abies* + *Picea* forest on the slope, 2 Sep 2007, coll. V. Barkalov.

This is the first chromosome count for the genus *Arisaema* from the Kurils. *A. japonicum* is closely related to *A. peninsulae* Nakai (*A. japonicum* auct.), which is distributed in the south of Primorskii Krai, as well as in China and Korea. Both species have the chromosome number 2n = 28, and it is the minimal for the genus *Arisaema.* There are chromosome reports of 2n = 28 for *A. japonicum* from Japan, but also 2n = 42 (Bolkhovskikh et al. 1969; Index ... 2003). *A. japonicum* is distributed in South Kurils and Japan. In forests.

ASTERACEAE

****Artemisia montana*** (Nakai) Pamp., **2n = 36.**

VLA 7859, Kurils, Kunashir Island, Alyokhina Bay, marine terrace, 19 Aug 1999, coll. V. Barkalov.

First chromosome count for *A. montana* from the Kurils, and also the first in Russia. This specimen was earlier misidentified as "*A. koidzumii* Nakai" in Probatova et al. (2007). Later the specimen was re-identified by A. A. Korobkov (St.-Petersbourg). For *A. montana* 2n = 51, 52, 53, 54 were reported from

Japan (see Nishikawa 2008), but 2n = c.54 for "*A. verlotiorum*" from Sakhalin (Sokolovskaya 1960) does not belong to *A. montana*, but to allied species *A. opulentha* Pamp. (Probatova et al. 2007). So, we revealed a new cytotype in *A. montana*. This species is West Pacific as to its distribution, and it occurs in Khabarovskii Krai (south-east), Primorskii Krai, Sakhalin, the Kurils and Japan. Valley forests, shrub communities, on pebbles and slide-rocks.

Cirsium pectinellum A. Gray var. *shikotanense* Miyabe et Tatew., **2n = 34.**

VLA 11708, Kurils, Shikotan Island, near Malokuril'skoe settlement, Cape Trezubets, in the canyon, on stony slope, on the rocks, 5 Aug 2010, coll. V. Barkalov.

For *C. pectinellum* 2n = 34 was reported from Kunashir and Moneron Islands (Probatova et al. 2004) and from Japan – 2n = 34, 68 (Nishikawa 2008). We have not found chromosome information for var. *shikotanense*. *C. pectinellum* is West Pacific species, it is distributed on Sakhalin (south), South Kurils and Japan. Moist meadows, bogs.

Crepis hokkaidoensis Babc., **2n = 8.**

VLA 11704, Kurils, Shikotan Island, near Malokuril'skoe settlement, Cape Trezubets, on the rocks, 6 Aug 2010, coll. V. Barkalov.

First chromosome report from the Kurils. This chromosome number 2n = 8 was revealed earlier on Moneron, it is also known from Japan (Probatova et al. 2007, Nishikawa 2008). *C. hokkaidoensis* is West Pacific, it is distributed on Sakhalin, Moneron, South Kurils and Japan. On rocks and screes, volcanic fields.

Erigeron kamtschaticus DC., **2n = 18.**

VLA 11748, Kurils, Shikotan Island, 3 km SW of Krabozavodskoe settlement, on poorly matted loamy roadside slope, 3 Aug 2010, coll. V. Barkalov.

First chromosome report from the Kurils. The chromosome number (2n = 18) was known from Kamchatka and the North Koryakia (Agapova et al. 1990; Probatova et al., 2008). West Pacific. Forest edges, meadows.

Leontopodium kurilense Takeda, **2n = 26.**

VLA 11752, Kurils, Shikotan Island, near Malokuril'skoe settlement, Cape Trezubets, in the canyon, stony slope, 5 Aug 2010, coll. V. Barkalov.

Poorly studied species, with some misidentifications in the Russian Far East (RFE) (see note in Probatova et al. 2009). It was recently studied on Shikotan Island, Mt. Shikotan (2n = 26, l. c.). Distribution: South Kurils (Iturup and Shikitan Islands). Endemic. Mountains, coastal rocks.

Taraxacum shikotanense Kitam., **2n = 48.**

VLA 11707, Kurils, Shikotan Island, Bezymjannaya Bay, near the Cape Nepokornyi, on coastal rocks, 24 Jul 2010, coll. V. Barkalov.

The species was described from Shikotan Island. Chromosome number in *T. shikotanense* was known from Japan: 2n = 64 (Nishikawa 2008). Now we revealed a new – hexaploid cytotype (6x), with 2n = 48. Further studies are needed. Distribution of *T. shikotanense:* South Kurils; Japan (Hokkaido). Coastal sands and pebbles, stony slopes.

BRASSICACEAE

+*Berteroa incana* (L.) DC., **2n = 16.**

VLA 11385, Sakhalin, Tymovskii Raion, near Zonal'noe, riverside of the Tymj River, on pebbles, 20 Sep 2008, coll. V. Barkalov.

First chromosome report from Sakhalin. This species is alien in the RFE, and it is rare in Sakhalin. It was studied in the Primorskii Krai (2n = 16 – Probatova et al. 1986). Distribution: Eurasia (?). Roadsides, fallow lands.

Cardamine impatiens L., **2n = 16.**

VLA 9711, Moneron Island, Asakhi Mt., on the slope, along the rivulet, 24 Aug 2004, coll. V. Barkalov; VLA 11735, Kurils, Shikotan Island, Otradnaya Bay, stony maritime slope, forb meadow, 7 Aug 2010, coll. V. Barkalov.

This is the first chromosome count from the Kurils. The species was already studied from Moneron Island (Chuprova Bay), as well as in the Primorskii Krai, near Vladivostok (Probatova et al. 2007). The chromosome number 2n = 16 was reported many times for *C. impatiens* in the literature. Distribution: Eurasia. On rocks and sandbanks.

Cardaminopsis lyrata (L.) Hiit., **2n = 16.**

VLA 11714, Kurils, Shikotan Island, near Malokuril'skoe settlement, tectonic break, rubbly-melkozem screes at the rocks, 21 Jul 2010, coll. V. Barkalov.

The same chromosome number (2n = 16) was revealed in Urup Island, as well as in Sakhalin; however, in the northern part of the RFE (Chukotka, Kamchatka and near Magadan) two cytotypes, with 2n = 16 and 32 are known (Probatova et al. 2007). North Pacific. Coastal rocks and screes.

Cochlearia oblongifolia DC. (*C. officinalis* auct.), **2n = 14.**

VLA 11711, Kurils, Shikotan Island, Bezymjannaya Bay, near the Cape Nepokornyi, on coastal rocks, 24 Jul 2010, coll. V. Barkalov.

This species was already studied on the Kurils: Ekarma, Onekotan, Demina Islands (2n = 14 – Probatova et al. 2007). *C. officinalis* L. s. l. (with 2n = 12, 24, 48, 60 etc.) doesn't occur in the RFE (Cherepanov 2007). North Pacific. Coastal rocks.

Draba kurilensis (Turcz.) Fr. Schmidt (*D. borealis* auct., p. p.), **2n = 32.**

VLA 11758, Kurils, Shikotan Island, Bezymjannaya Bay, near the Cape Nepokornyi, coastal rocks, 24 Jul 2010, coll. V. Barkalov.

D. kurilensis was studied on Sakhalin (2n = 16), Moneron and Middle Kurils – Shiashkotan and Matua Islands (2n = 32) (Probatova et al. 2007). It belongs to the North Pacific *D. borealis* DC. complex, which was known by high polyploid chromosome numbers 2n = 64, 80 – from Chukotka and other northern areas. It is noteworthy that in the southern part of this complex' geographical range only low ploidy levels 2x, 4x are found. Distribution: Sakhalin, Kurils; Japan. Coastal rocks.

Draba sachalinensis (Fr. Schmidt) Trautv., **2n = 48.**

VLA 11496, Sakhalin, Aleksandrovsk- Sakhalinskii Raion, near Due settlement, the Cape Khodzhi, stony maritime slope, 6 Sep 2009, coll. V. Barkalov.

D. sachalinensis also belongs to the North Pacific *D. borealis* DC. complex. The syntypus of this species includes the specimen from "Dui", or Due ("locus classicus"). We found in the literature only one chromosome number for *D. sachalinensis* - 2n = 64 (Nishikawa 2008). So, we revealed a new - hexaploid cytotype (6x) in *D. sachalinensis*. Distribution: Sakhalin; Japan. Coastal rocks.

Isatis yesoensis Ohwi (*I. japonica* auct.), **2n = 28.**

VLA 11495, Sakhalin, Aleksandrovsk- Sakhalinskii Raion, near Due settlement, the Cape Khodzhi, maritime slope, on the rocks, 6 Sep 2009, coll. V. Barkalov.

We consider more correct to accept for these plants, which have a distinct geographical range (but usually are taken as a variety), the rank of species close to *I. tinctoria*. The chromosome number in *I. yesoensis* was studied earlier from De-Livrona Island in Peter the Great Bay and from the Amur River basin (2n = 28 – Agapova et al. 1990; Probatova, Seledets et al. 2008 – as "*I. japonica*"). The chromosome nuber in *I. yesoensis* is studied for the first time on Sakhalin. Distribution: Lower Amur, Primorskii Krai (south), Sakhalin. Seacoasts, rubbly riversides.

Macropodium pterospermum Fr. Schmidt, **2n = 30.**

VLA 11487, Sakhalin, Vostochno-Sakhalinskye Mts., Nabil'skyi Ridge, Chamguinskii Pass, big stone screes, at the rocks, 11 Sep 2009, coll. V. Barkalov.

This is the second chromosome report for this species, the first was also from Sakhalin, the Tikhaya River (2n = 30 – Probatova et al. 2004, 2007). *M. pterospermum* represents a relict genus with 2 species, and this genus is one of the most ancient in Brassicaceae. Distribution. Sikhote-Alin' Range (the Khor River basin), Sakhalin; Japan. On rocks in forests.

Noccaea cochleariformis (DC.) A. et D. Löve (*Thlaspi cochleariforme* DC.), **2n = 14.**

VLA 9119, Sakhalin, Schmidt Peninsula, the Taliki River, dry rubbly-melkozem slope, 14 Aug 2001, coll. V. Barkalov.

We already reported this diploid chromosome number 2n = 14, from Sakhalin, Nabil'skii Ridge (Probatova et al. 2004). This is the same situation, as in *Draba kurilensis* (see above): the diploid cytotype is found at the southern limit of the species geographical distribution. In other parts of its area only polyploid chromosome numbers are known: 2n = 28, 56 – in Arctic Siberia, 2n = 84 – in Chukotka (see notes in Probatova et al. 2007). So, we confirm that in Sakhalin there is the relict, ancient part of the species distribution area. Distribution: Sakhalin (north), Chukotka, Upper Amur (rare); Siberia, Central Asia, East Europe. On rocks.

CARYOPHYLLACEAE

Sagina crassicaulis S Wats., **2n = 22.**

VLA 11715, Kurils, Shikotan Island, near Malokuril'skoe settlement, Cape Trezubets, in the canyon, on humid rocks, 5 Aug 2010, coll. V. Barkalov.

This diploid (2x) chromosome number 2n = 22 was revealed already in *S. crassicaulis* in the Kurils: Brat Chirpoev and Yurii Islands (Probatova, Barkalov et al. 2006), but only polyploid counts 2n = 44, 46 and 66 were known from North America, as *S. maxima* var. (or subsp.) *crassicaulis* (Nishikawa 2008). One more example of relict, ancient part of the species distribution area in the Kurils. Distribution: North Pacific. Seacoasts, on screes and supralittoral zone.

+*Silene dichotoma* Ehrh., **2n = 24.**

VLA 11386, Sakhalin, Noglikskii Raion, 6 km NW of Nogliki settlement, the area between the Bol'shaya Veni River and the Dzhimdan River, Dorozhnyi stream, recultivated plot at the gas pipeline, 13 Sep 2008, coll. V. Barkalov.

This species is alien in Sakhalin, as well as in West Siberia. *S. dichotoma* was recently reported for the first time from the RFE by Barkalov et al. (2009), and still it is known only from Sakhalin. The species is studied for the first time on the RFE (and probably in Russia). *S. dichotoma* obviously penetrate from North America with seeds for recultivation of disturbed lands around the gas pipeline and it might become aggressive in Sakhalin. The chromosome number (2n = 24) is reported for *S. dichotoma* in the literature (Bolkhovskikh et al. 1969; Index... 1984, 1996, 2000). Distribution: Europe, West Asia, Japan (alien), North America (naturalized). On fallow lands.

ERICACEAE

Menziesia pentandra Maxim., **2n = 26.**

VLA 10900, Kurils, Shikotan Island, Notoro Mt., 24 Aug 2007, coll. V. Barkalov.

Earlier *M. pentandra* was studied from Kunashir Island, 2n = 26 (Gurzenkov 1995). The genus *Menziesia* Smith is poorly investigated caryologically: we found in the literature one more report – for *M. ferruginea,* n = 13 (Index... 1968). Distribution: Sakhalin (south), South Kurils; Japan. In coniferous-broad-leaved forests.

FABACEAE

Vicia japonica A. Gray, **2n = 12.**

VLA 11485, Sakhalin, Aleksandrovsk-Sakhalinskii Raion, Due settlement, maritime slope, meadow with various herbs, 7 Sep 2009, coll. V. Barkalov; VLA 10826, Kurils, Shikotan Island, Zvezdnaya Bay, coastal slope, meadow, 30 Aug 2007, coll. V. Barkalov.

V. japonica is studied caryologically for the first time on the Kurils. The chromosome number in *V. japonica* was determined earlier from Sakhalin and the Primorskii Krai (the Rudnaya River), 2n = 12 (Rudyka 1986, as "*V. heterophylla*"; Pavlova et al. 1989). From Japan, Hokkaido (where this species has been described from) 2n = 12 was also known (Nishikawa 2008), but from China 2n = 12 and 24 were reported (Index... 1996, 1998). We suppose that 2n = 24 has to be referred to some other species. The chromosome number 2n = 24 reported by Rudyka (1986) for "*V. japonica*", belongs to *V. woroschiloviii* N.S. Pavlova (Pavlova et al. 1989). Distribution: Primorskii Krai, Sakhalin (south), South Kurils; Japan. Coastal meadows and rocks.

HEMEROCALLIDACEAE

Hemerocallis esculenta Koidz., **2n = 22.**

VLA 8620, Kurils, Kunashir Island, Alyokhina Bay, meadow, 19 Aug 1999, coll. V. Barkalov.

Chromosome number in *H. esculenta* (2n = 22) was studied from Sakhalin, Moneron and the Kurils, Iturup and Kunashir Islands (Probatova et al. 2007, 2009). In the literature there are also reports of 2n = 22 (Index... 1990, 1996, 2003). Distribution: Sakhalin, South Kurils; Japan. Forest edges and meadows.

POACEAE

****Arctopoa alexeji*** (Sofeikova et Worosch.) Probat., **2n = 42.**

VLA 3679, Sakhalin, Makarovskii Raion, vicinity of Zaozernoe settlement, the mouth of Lazovaya River, riverside sediments, on pebbles, 25 Aug 1972, coll. N. Probatova & V. Seledets.

This is a robust plant, with big stems, very long leaves, large panicles with partly scabrous spreading branches and large spikelets. The species is very close to *A. eminens* (J. S. Presl) Probat. (Probatova 2006), and this specimen was previously identified as "*Arctopoa eminens*" (Probatova 2003). Distribution: Kamchatka (Yelizovskii Raion), Magadanskaya Oblast' (Ol'skii Raion, Talan Island), Sakhalin (Poronayskii and Makarovskii Raions). Riversides (near the mouth), estuaries, wet meadows on sea shores; rare.

Festuca hondoensis (Ohwi) Ohwi, **2n = 14.**

VLA 11710, Kurils, Shikotan Island, 3 km SW of Krabozavodskoe settlement, on loamy roadside slope, 3 Aug 2010, coll. V. Barkalov.

The first chromosome count in Russia for this species, which occurs only on Shikotan Island. From Japan the chromosome

number 2n = 14 was already known for *F. hondoensis* (Tateoka 1980). Distribution: Kurils (Shikotan Isl.); Japan. *Juniperus* communities and meadows on stony slopes, rare.

Glyceria probatovae Tzvel. (*G. ischyroneura* auct.), **2n = 40.**

VLA 10927, Kurils, Kunashir Island, east coast, near Saratovskii cordon, mixed forest (*Picea* + *Alnus*), 17 Sep 2006, coll. V. Barkalov.

The chromosome number in *G. probatovae* was counted from Iturup Island, 2n = 40 (Probatova et al. 2007). The same chromosome number is known from Japan for allied species – *G. ischyroneura* Steud., but the latter does not occur in the RFE (Tzvelyov 2006). Described from Iturup Island. Distribution: South Kurils; Japan. Moist meadows.

Poa dudkinii Probat. (aff. *P. sugawarae* Ohwi), **2n = c.63.**

VLA 8389, Sakhalin, Okhinskii Raion, 15 km E of Pil'tun settlement, sandy barrages, 31 Aug 2000, coll. R. Dudkin.

The species is "intermediate" between *P. sugawarae* Ohwi and *P. macrocalyx* Trautv. et C. A. Mey., it looks like the first one, but its chromosome number and ecology are very different. In *P. sugawarae* we revealed 2n = 28 (Probatova et al. 2004). Both *P. sugawarae* and *P. dudkinii* belong to the group which is endemic of Sakhalin – subsect. *Sachalinenses* Probat. (sect. *Malacanthae* (Roshev.) Olon., of the genus *Poa* L.) (Tzvelyov & Probatova 2010). Distribution: Sakhalin. Endemic. Coastal sands.

Poa pseudoattenuata Probat. (*P. glauca* auct.), **2n = 28.**

VLA 11449, Moneron Island, Chuprova Bay, on the rocks near the stream, not far from the waterfall, 15 Jul 2004, coll. V. Barkalov.

— **2n = 42.**

VLA 11488, Sakhalin, Vostochno-Sakhalinskye Mts., Nabil'skii Ridge, Chamginskii Pass, rubbly-melkozem plots at the road, 11 Sep 2009, coll. V. Barkalov.

Polymorphic species. Now 3 cytotypes within this species are known, with 2n = 28, 42, 56, all of them from Sakhalin; 2n = 28 was also revealed from Nabil'skii Ridge on Sakhalin (Probatova et al. 2007). This is the first chromosome information for *P. pseudoattenuata* from Moneron Island. Distribution: the Amur River basin, Primorskii Krai (north-east), Sakhalin, South Kurils; Japan (?). On rocks and pebbles, rubbly-melkozem slopes. Described from Sakhalin (Zaozernoe).

POLYGONACEAE

Persicaria hydropiper (L.) Spach, **2n = 20.**

VLA 10921, Kurils, Shikotan Island, middle course of the Gorobets River, wet plots at roadside, 5 Sep 2007, coll. V. Barkalov.

First chromosome count from the Kurils. This is the most common chromosome number report for *P. hydropiper* in the extensive literature, though 2n = 18, 22, 24 are also reported, mostly for "*Polygonum hydropiper*". Distribution: Eurasia. Swamp meadows, riverbanks.

Persicaria lapathifolia (L.) S. F. Gray (*Polygonum nodosum* Pers.), **2n = 22.**

VLA 10889, Kurils, Shikotan Island, the Ostrovnoi Peninsula, lakeside, 31 Aug 2007, coll. V. Barkalov.

This is the first chromosome count for *P. lapathifolia* from the Kurils. The chromosome number 2n = 22 is the most common for this very polymorphic species, studied in many parts of its area of distribution, in the RFE – in the Amur River basin and the Primorskii Krai. Distribution: Holarctic. Wet meadows, riverbanks, waste places.

Persicaria yokusaiana (Makino) Nakai (*Polygonum yokusaianum* Makino), **2n = 40.**

VLA 10890, Kurils, Shikotan Island, Tserkovnaya Bay, sea shore, 2 Sep 2007, coll. V. Barkalov.

This species is poorly studied; its chromosome number was counted earlier from Kunashir Island (Probatova et al. 2007) and Japan (Nishikawa 2008). Distribution: Primorskii Krai (south; alien?), South Kurils; Japan. Valley forests, wet meadows, hot springs, riverbanks, roadsides.

RANUNCULACEAE

****Pulsatilla taraoi*** (Makino) Takeda ex Zam. et Paegle, **2n = 16.**

VLA 10928, Kurils, Shikotan Island, Ploskaya Mt., near the top, low herbs meadow, 27 Aug 2007, coll. V. Barkalov.

This is the first chromosome count for *P. taraoi*. Distribution: South Kurils. Endemic. Described from Brat Chirpoev Island. Mountain meadows, marine terraces.

ROSACEAE

Potentilla matsumurae Th. Wolf, **2n = 28.**

VLA 10820, Kurils, Shikotan Island, Shikotan Mt., on the rocks, 23 Aug 2007, coll. V. Barkalov.

At first the chromosome count for this specimen was published by error as "2n = 14" in Probatova et al. (2009). As to 2n = 28, this chromosome number was already known for *P. matsumurae* from Japan (Nishikawa 2008). Distribution: Sakhalin (south), Kurils (South and Middle); Japan. Mountain tundras, alpine meadows, stony slopes and rocks.

Potentilla nivea L., **2n = 42.**

VLA 11647, Kurils, Shikotan Island, near Malokuril'skoe settlement, Cape Trezubets, on the rocks, 6 Aug 2010, coll. V. Barkalov.

First count from the Kurils. Very polymorphic species, with many chromosome reports in the literature: 2n = 14, 28, 42, 49, 54-56, 56, 63, c. 70, 70 (Bolkhovskikh et al. 1969, Index... 1991, Agapova et al. 1993, Nishikawa 2008). From Sakhalin (Schmidt Peninsula) 2n = 28 is known (Probatova et al. 2007). Distribution: Holarctic. In the RFE – from Chukotka and Wrangel Island to Primorskii Krai, Sakhalin, Kurils (Shikotan Island). Mostly in mountain tundras.

+*Potentilla norvegica* L., **2n = 56.**

VLA 10838, Kurils, Shikotan Island, middle course of the Gorobets River, roadside, 5 Sep 2007, coll. V. Barkalov.

First count from the Kurils. Very polymorphic species. It was studied in Sakhalin (2n = 56 – Probatova et al. 2007), in the Amur River basin, in Magadanskaya Oblast' and many times – in the Primorskii Krai, everywhere we revealed 2n = 56, but in the literature for *P. norvegica* various chromosome reports exist: 2n = 42, 56, c. 63, c. 70, 70; the most often are 2n = 56 and 70 (Bolkhovskikh et al. 1969, Index..., 1981, 1984, 1985, 1990, 1991, 1994, 2000, 2006, Agapova et al. 1993). Distribution. Holarctic (?). Disturbed places, riverbanks, roadsides. Probably, alien (introduced) on Sakhalin and the Kurils.

Potentilla stolonifera Lehm., **2n = 14.**

VLA 11482, Sakhalin, Anivskii Raion, near Peschanskoe village, sandy seacoast, 18 Aug 2009, coll. V. Barkalov.

For this species only diploid chromosome number 2n = 14 is known. Earlier it was studied in Sakhalin (north) and on Kunashir Island, also in Kamchatka and North Koryakia, in Japan (Agapova et al. 1993, Probatova et al. 2007; Nishikawa 2008). Distribution: West Pacific. Coastal (supralittoral) species.

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