

CONTRIBUTION TO MOSS FLORA
OF THE KURIL ISLANDS (RUSSIAN FAR EAST)

ДОПОЛНЕНИЕ К ФЛОРЕ МХОВ
КУРИЛЬСКИХ ОСТРОВОВ (РОССИЙСКИЙ ДАЛЬНИЙ ВОСТОК)

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Abstract

The lists of moss species of smaller and rarely visited Kuril Islands are provided. The northernmost localities are revealed for *Plagiothecium obtusissimum* and *Mnium orientale* (Rasshua Island), *Mielichhoferia japonica* (Shiashkotan) and *Dicranum hakkodense* (Urup Island), and southernmost locality for *Psilopilum laevigatum* and *Cinclidium latifolium* (Onekotan Island). Some rare species are discussed.

Резюме

Приводятся списки видов более мелких и редко посещаемых островов Курильской гряды. Для 4 видов выявлены наиболее северные точки распространения: *Plagiothecium obtusissimum* и *Mnium orientale* (о. Расшуа), *Mielichhoferia japonica* (Шиашкотан) and *Dicranum hakkodense* (о. Уруп), а для *Psilopilum laevigatum* и *Cinclidium latifolium* выявлены наиболее южные местонахождения на о. Онекотан. Обсуждаются находки некоторых редких видов.

KEYWORDS: mosses, Russia, Kuril Islands, new records

Kuril Islands are situated in a line between Kamchatka and Japan, separating the Pacific Ocean and Okhotsk Sea. Many of these islands are uninhabited, and only two large northern islands, close to Kamchatka (Paramushir and Shumshu) and three large southern ones (Iturup, Kunashir, and Shikotan) have certain permanent towns/villages. The bryophyte flora of them is known much better, and it was summarized for two former islands by Bakalin & Cherdantseva (2006), and for the three latter by Bakalin et al. (2009). So, these islands are beyond the scope of the present paper. Other islands have very scanty data, 42 species only, published by Abramova (1960), Vasil'eva (1960), and Cherdantseva (1986). One of the authors, TN, studied hepatic

flora of Kuril Islands and collected a number of mosses that were identified by EI and MI. Collections are kept in MHA. Certainly, the data are incomplete. However, we decide to publish them in order not to lose the information that was collected in quite difficult expeditions. These lists include also several identifications of old, previously unidentified collections kept in LE (those are marked by "(LE)" after species). Interesting records are boldfaced and briefly commented below, while more common species are just listed for the corresponding islands (complete label information will be available in database <http://www.arctoa.ru/Flora/basa.php>). Previously published data are also included and marked as (A) for Abramova (1960), (V) for Vassilieva (1960),

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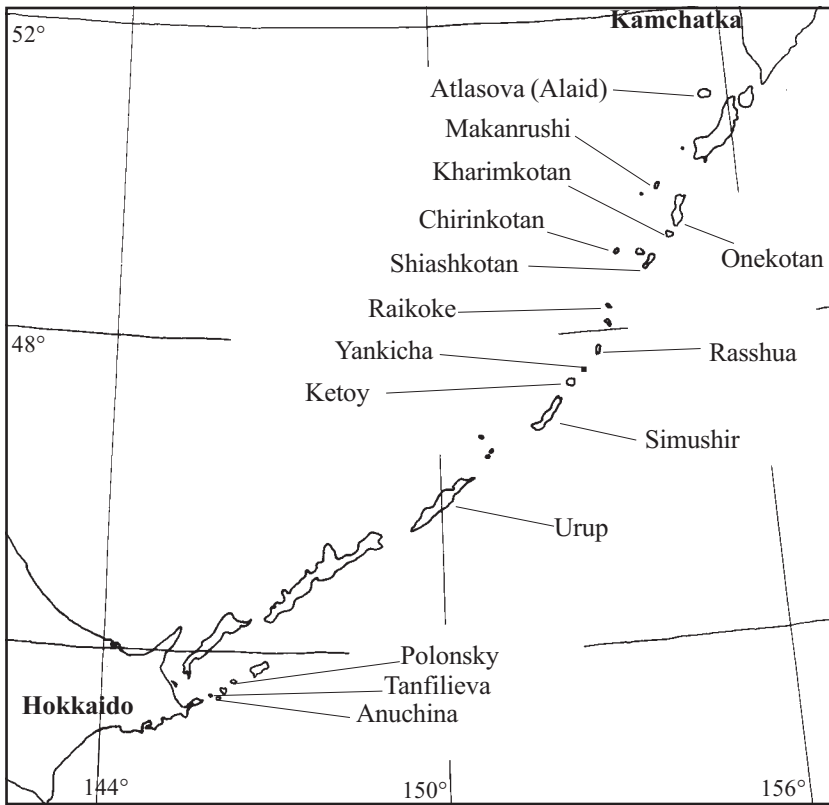


Fig. 1. Kuril Islands where collections discussed in the present paper were made.

(Ch) for Cherdantseva (1986) and in case if the present collections also included this species it is marked by asterisk (*). The arrangement of islands is from North to South (Fig. 1). Species names are according to Ignatov, Afonina, Ignatova et al. (2006).

Atlasova (Alaid) Island: *Dichodontium palustre* (A), *Brachythecium rivulare* (A).

Makanrushi Island: *Calliergonella lindbergii* (LE), *Dicranum scoparium* (LE), *Polytrichum juniperinum* (A).

Onekotan Island: *Andreaea alpestris*, *A. nivalis*, *A. rupestris*, *Aulacomnium palustre** (Ch), *Bryhnia novae-angliae*, *Bryoxiphium norvegicum* var. *japonicum** (Ch), *Bryum pseudotriquetrum*, *Calliergonella lindbergii*, *Cinclidium latifolium*, *Codriophorus brevisetus*, *C. corrugatus*, *C. fascicularis*, *Cratoneuron filicinum*, *Dichodontium pellucidum*, *Dicranella subulata*, *Dicranum majus*, *Distichium capillaceum** (Ch), *Ditrichum heteromallum*, *Fissidens dubius*, *Gollania turgens*, *Herzogiella adscendens*, *Leucobryum juniperoideum*, *Mnium thomsonii*, *Niphotrichum muticum*, *Oligotrichum parallelum*, *Plagiomni-*

um medium, *Pleurozium schreberi*, *Pogonatum dentatum* (A, Ch.), *P. urnigerum* (A, Ch.), *Pohlia cruda*, *Polytrichastrum longisetum** (A, Ch.), *P. pallidisetum* (Ch), *Polytrichum commune* (A, Ch.), *Psilopilum laevigatum*, *Racomitrium lanuginosum*, *Rhizomnium magnifolium*, *R. nudum* (Ch), *Rhytidiadelphus squarrosus*, *R. subpinna-*
*tus** (Ch), *Sanionia uncinata*, *Schistidium* sp., *Sciuro-hypnum uncinifolium*, *Sphagnum compactum** (Ch), *S. contortum*, *S. girgensohnii*, *S. squarrosus*, *Stereodon callichrous* var. *japonicus*, *S. plicatulus*, *Straminergon stramineum*, *Tetraplodon mnioides* (A, Ch.), *Ulota drummondii*, *Warnstorffia fluitans*.

Kharimkotan Island: *Arctoa fulvella*, *Calliergonella lindbergii*, *Codriophorus fascicularis*, *Dichodontium riparium*, *Distichium capillaceum*, *Ditrichum heteromallum*, *Hygrohypnella ochracea*, *Philonotis fontana*, *Pohlia* cf. *nutans*, *P. cruidoides*, *P. filum*.

Chirinkotan Island: *Bryhnia novae-angliae*, *Codriophorus fascicularis*, *Pohlia* cf. *longicollis*, *Polytrichastrum alpinum*, *Rhizomnium nudum*, *Sciuro-hypnum glaciale*, *Trachycystis flagellaris*.

Shiashkotan Island: *Arctoa fulvella*, *Ceratodon purpureus* (A), ***Codriophorus corrugatus***, *Dichodontium palustre* (A), ***Mielichhoferia japonica***, ***Philonotis yezoana*** (LE), *Pohlia nutans*, *P. wahlenbergii* (LE), *Polytrichum juniperinum* (A), *Sphagnum squarrosum* (V).

Raikoke Island: *Schistidium maritimum* (LE).

Rasshua Island: *Buxbaumia aphylla*, *Calliergon cordifolium* (A), *Calliergonella lindbergii*, *Codriophorus brevisetus*, *Dicranum bonjeanii*, *D. majus*, *D. scoparium* (A), *D. undulatum* (A), *Herzogiella adscendens*, *Hylocomium splendens*, ***Mnium orientale***, *Oncophorus wahlenbergii* (A), *Philonotis fontana*, ***Plagiothecium obtusissimum***, *Pleurozium schreberi*, *Pohlia nutans*, *Polytrichastrum alpinum*, *Polytrichum commune** (A), *Rhytidiadelphus japonicus*, *R. subpinnatus*, *Sciuro-hypnum starkei*, *Sphagnum girgensohnii*, *S. quinquefarium* (V), *Trachycystis flagellaris*, *Warnstorfia fluitans*.

Yankicha Island: *Hylocomium splendens* (A), *Pleuroziopsis ruthenica* (A), *Rhytidiadelphus subpinnatus* (A), *Sphagnum riparium* (V).

Ketoi Island: *Bartramiopsis lescurii*, *Bucklandiella sudetica*, *Codriophorus acicularis*, *Sanionia uncinata*.

Simushir Island: *Amblystegium serpens*, *Anomobryum julaceum* var. *concinatum*, *Bryum pseudotriquetrum*, *B. weigeli*, *Calliergonella lindbergii*, *Ceratodon purpureus*, *Cratoneuron filicinum*, *Dichodontium palustre*, *D. pellucidum*, *Dicranum bonjeanii*, *Herzogiella adscendens*, ***Hygrohypnella bestii***, *Mnium lycopodioides*, *Niphotrichum canescens*, *Ochyraea duriuscula*, *Oligotrichum hercynicum*, *Philonotis fontana*, *Plagiomnium vesicatum*, *Pogonatum japonicum*, *Pohlia filum*, *Polytrichastrum alpinum* (A), *Polytrichum juniperinum* (A), *Racomitrium lanuginosum* (A), *Rhizomnium magnifolium*, *R. striatulum*, *Schistidium maritimum*, *Sciuro-hypnum starkei*, *Stereodon pallascens*.

Urup Island: *Codriophorus brevisetus* (A), *C. fascicularis* (A), *Calliergon cordifolium* (A), *Cratoneuron filicinum* (A), *Dicranum fuscescens* (A), ***D. hakkodense*** (LE), *D. majus* (A), *D. scoparium** (A), *D. undulatum* (A), *Hylocomiastrum pyrenaicum* (A), *Hylocomium splendens* (A), *Leprobryum pyriforme* (A), ***Mnium orientale***, *Philonotis fontana* (LE), *Plagiomnium ellipticum* (LE), *Pleuroziopsis ruthenica* (A), *Pleurozium schreberi* (A), *Pogonatum japonicum* (A), *Poly-*

trichastrum alpinum (A), *Polytrichum strictum* (A), *Pseudobryum cinclidioides* (LE), *Rhizomnium magnifolium* (LE), *Rhytidiadelphus japonicus* (LE), *R. triquetrus* (A), *Sanionia uncinata* (A), *Stereodon plicatulus* (A), *Warnstorfia fluitans* (A).

Polonsky Island: *Atrichum undulatum* (A), (LE), *Aulacomnium palustre* (A), *Polytrichum commune* (A), *Sphagnum fimbriatum* (V).

Tanfilieva Island: *Ceratodon purpureus* (A), *Sphagnum fimbriatum* (V).

Anuchina Island: *Ceratodon purpureus* (A), *Brachythecium rivulare* (A).

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Most listed species are widespread and belong to circumboreal elements, but some findings have the obvious phytogeographic significance.

1. Northernmost localities.

***Plagiothecium obtusissimum*.** The species is quite common in Kunashir, occurring also in Iturup, Urup, Shikotan, Sakhalin (very rare), and also in Hokkaido and Honshu in Japan. This relatively small range is expanded by the finding from Rasshua Island, ca. 300 km NE from its previously known locality, and this is also the northernmost known locality of the species.

***Dicranum hakkodense*.** The expanded circumscription of this species is given by Ignatova & Fedosov (2008). According to the previously known data the species is known up to Iturup Island. Rather surprisingly it is not known further to the north, although it commonly grows in high mountains, i.e. in more northern environment. Urup collection is the northernmost.

***Mnium orientale*.** This species was described by Wyatt et al. (1997), who found that collections traditionally referred to '*Mnium hornum*' in Japan (and apparently neighboring areas) belong to a separate species. It was suspected to occur in Russia (Ignatov, Afonina, Ignatova et al., 2006), but without definite data. The collections from Rasshua and Urup are the northernmost for this species.

Mielichhoferia japonica was revealed in Russia by Bardunov (1982), but is still known from few places in Southern Kurils. The new finding in the Shiashkotan Island expands its range more for than 600 km.

2. Southernmost localities

***Psilopilum laevigatum*.** Only few plants were found among other mosses and liverworts in col-

lection from Onekotan, ca. 500 km from the nearest locality in Kamchatka (Bannaya River, cf. Czernyadjeva, 2005). Previously this species was reported in a number of localities, but according to Ivanova et al. (2005), all checked records from the southern Siberia belong to *Oligotrichum falcatum*.

Cinclidium latifolium. Another northern species known from southern Kamchatka (Czernyadjeva, 2005) was found in Onekotan, and this is the most southern record in the Russian Far East, and likely in the world.

3. Species only recently revealed in Russia.

The active study of Kamchatka has revealed recently 4 species new for Russia: *Hygrohypnella bestii* and *Niphotrichum muticum* (Czernyadjeva, 2005), *Sciuro-hypnum uncinifolium* (Czernyadjeva & Ignatov, 2006), *Philonotis yezoana* (Czernyadjeva, 1995). Also *Codriophorus corrugatus* (Bednarek-Ochyra, 2004) was described recently, and localities from Russia were mentioned in the original description. The new collections of all these species demonstrate that they are probably not very rare and will be found in additional localities after thorough study of the area.

4. Rare and interesting species.

Dichodontium palustre has unusual disjunctive distribution, occurring in Russia in Kola Peninsula and Karelia in NW European Russia, in Caucasus, and in Asia only along Pacific coast in Chukotka, Kamchatka, and Kuril Islands. In Kurils it grows usually in or near thermal springs, which is distinct from the European habitats.

Gollania turgens. In Russia this species was known only from South Siberia. There are also records from NW North America, China and Japan.

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