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MOSSES OF THE BARGUZIN STATE NATURE BIOSPHERE RESERVE (REPUBLIC OF BURYATIA)

МХИ БАРГУЗИНСКОГО ГОСУДАРСТВЕННОГО ПРИРОДНОГО БИОСФЕРНОГО ЗАПОВЕДНИКА (РЕСПУБЛИКА БУРЯТИЯ)

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Abstract

An annotated list of mosses of the Barguzin Reserve (Republic of Buryatia) was compiled based on recent collections of the authors, revision of herbarium materials and summarizing of literature data. It includes 257 species, 97 of them are new for the reserve. In general, the flora is typical for the mountainous areas of southern Siberia. Some its specificity is determined by the presence of the arcto-montane species (*Arctoa fulvella, Oligotrichum falcatum, Polytrichastrum septentrionale, Rhizomnium andrewsianum, Sphagnum aongstroemii, etc*.) and East Asian species (*Anomobryum nitidum, Bucklandiella nitidula, Dicranum japonicum, Iwatsukiella leucotricha, Myuroclada maximowiczii, Stereodon fauriei*). The record of a rare species, *Tetrodontium repandum,* is also interesting.

Резюме

Приводится аннотированный список 257 видов мхов из Баргузинского заповедника (Республика Бурятия). Статья основана на результатах обработки коллекций, собранных авторами. Учтены все опубликованные данные и гербарные материалы. 97 видов приводятся для заповедника впервые. В целом, флора типична для горных районов юга Сибири. Интересны находки ряда аркто-монтанных видов (*Arctoa fulvella, Oligotrichum falcatum, Polytrichastrum septentrionale, Rhizomnium andrewsianum, Sphagnum aongstroemii* и др.) и восточно-азиатских видов (*Anomobryum nitidum, Bucklandiella nitidula, Dicranum japonicum, Iwatsukiella leucotricha, Myuroclada maximowiczii, Stereodon fauriei*). Особый интерес представляет находка редкого вида *Tetrodontium repandum*.

KEYWORDS: mosses, flora, Siberia, Buryatia, Barguzin Reserve, rare species

Introduction

The Barguzin Nature Reserve is located on the western slopes of the Barguzinsky Range along the northeast coast of Lake Baikal in the Republic of Buryatia. The total area of the reserve is 374,322 hectares. The boundaries of the reserve are as follow: in the east, along the main ridge of the Barguzin Range; in the north, 2 km south of the mouth of the Shegnanda River; in the south, it borders the Zabaikal'skii National Park; and in the west, it is bordered by the shore of Baikal Lake and the adjacent three-kilometer territory (Ananin, 2002).

Study area

The relief of the reserve has a pronounced mountainous character and was formed at the end of the Pliocene and the beginning of the Quaternary period. The uplift of the Barguzin Range with simultaneous deepening of the Baikal Basin took place at this time. The axial part of the Barguzin Range within the reserve is composed of sedimentary crystalline and igneous intrusion rocks with a predominance of granite and gneiss. In the southern part, certain areas along the coastal part of Baikal and along river valleys are filled with loose quaternary sediments and limestone. The maximum height of the main watershed ridge is 2652 m above sea level. The jagged peaks of the rocks, covered with snow most of the year, often end with steep ledges. The main part of the reserve's relief comprises elevations with absolute heights of over 1250 m. Only around 30% of the reserve's territory is occupied by elevations with heights ranging from 600 to 1250 m above sea level (Tyulina, 1949; Florensov & Olyunin, 1965; Bannikov, 1966).

The hydrography of the reserve is represented by a dense and extensive network of rivers, streams, and lakes. In total, there are 17 rivers in the reserve flowing into Baikal Lake. The rivers are characterized by a mountainous terrain. In the upper reaches, they often have can-

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Fig. 1. The main collecting localities of mosses in the Barguzin Reserve (shown by shading also in smaller map), and collectors:
B-u – The upper course of Bol'shaya River; (location coordinates not indicated). Coll.: L.V. Bardunov, V.M. Kaplin, S.P. Kirpichev, V.N. Siplivinsky.
B-m – The middle course of Bol'shaya River; (location coordinates not indicated). Coll.: L.V. Bardunov, V.M. Kaplin, S.P. Kirpichev, V.N. Siplivinsky.
B-l – The low course of Bol'shaya River; (location coordinates not indicated). Coll.: L.V. Bardunov.
D-u – The upper of Davsha River (54°21'-54°22'N; 109°46'-109°49'E; 1000-1700 m alt.). Coll.: M.M. Ivanova, L.V. Krivobokov, L.N. Tyulina.
D-m – The middle course of Davsha River (54°23'-54°24'N; 109°41'-109°44'E; 500-800 m alt.). Coll.: L.V. Krivobokov.
D-l – The low course of Davsha River (54°20'-54°21'N; 109°30'-109°31'E; 450-500 m alt.). Coll.: L.V. Krivobokov, V.N. Siplivinsky.
D-s – The vicinity of Davsha Settlement (54°21'N; 109°30'E; 470 m alt.). Coll.: O.M. Afonina, I.V. Czernyadjeva.
S-u – The upper course of Shumilikha River (54°04' - 54°05'N; 109°36'-109°37'E; 1400-1600 m alt.). Coll.: O.M. Afonina, I.V. Czernyadjeva, Yu.S. Mamontov, G.I. Poplavskaya, V.N. Sukachev, L.N. Tyulina.
S-m – The middle course of Shumilikha River (54°05'N; 106°35'E; 1250 m alt.). Coll.: O.M. Afonina, I.V. Czernyadjeva, Yu.S. Mamontov.
S-l – The low course of Shumilikha River (location coordinates not indicated). Coll.: L.V. Bardunov, V.M. Kaplin.
SO – The valley of Sem' Ozer (54°20'-54°22'N; 109°50'-109°52'E; 1400-1700 m alt.). Coll.: L.V. Krivobokov, V.N. Siplivinsky.

yon-shaped valleys, fast currents, and a rapid channel. The largest rivers include the Urbikan, Kaban'ya, Ezovka, Bol'shaya, Davsha, Tarkulik, Sosnovka, Kudaldy, and Shumilikha. In the valleys of some rivers, thermal springs come to the surface in places of tectonic faults (Tyulina, 1949; Bannikov, 1966).

The climate of the reserve is determined by its location in the central part of the Asian continent on the shore of a large reservoir. The Barguzinsky Range, located across the eastern direction of air mass transfer prevailing in northern Baikal, has a significant effect. The climate is continental with some features of maritime. The proximity of Baikal reduces the temperature variations. The reserve is characterized by relatively warm winter, cool summer, high humidity, heavy rainfall, as well as a decrease in the rate of solar radiation owing to increased cloudiness. The average monthly temperatures during the year range from –22.7 to + 13.2°C. The average annual temperature is –3.7°C. The average duration of the frost-free period is approximately 76 days. The average amount of precipitation is 414.9 mm/year. Most of the precipitation is in the form of rain fall in July (62.6 mm), August (59.4 mm) and September (55.5 mm). On average, a period of steady snow cover lasts 193 days (Ananin & Ananina, 2002).

The large elevation difference, strong dissection of the relief, and influence of Baikal lead to well-pronounced altitude zones of vegetation, which is attributed by L.N. Tyulina (1976) to the "wet Baikal type". There are three vegetation zones: forest, subalpine, and alpine. Under the cooling effect of Baikal, larch forests and light forests dominate on the lower terraces along the shore of Baikal at altitudes of 460–600 m above sea level. Sometimes alternating with impassable thickets of *Pinus pumila*, there are areas of cedar (*Pinus sibirica*), pine, birch, and in some places, moss marshes and meadows. In the lower tier of larch forests, *Ledum palustre* and *Vaccinium vitis-idaea* predominate, mosses (*Pleurozium schreberi, Hylocomium splendens, Polytrichum commune, Ptilium crista-castrensis, Sanionia uncinata*) and lichens form the soil cover. In the middle part of the forest belt, at altitudes of 600–900 m above sea level, dark-and-light-coniferous forests of cedar (*Pinus sibirica*), fir, larch, and pine predominate. As we move up the slope, the last two tree species gradually disappear. In the lower tier, *Vaccinium myrtillus, Vaccinium vitis-idaea, Linnaea borealis*, *Maianthemum bifolium*, and *Pyrola* ssp. predominate; on soil, the extensive carpets are formed by green mosses (*Pleurozium schreberi, Hylocomium splendens, Sanionia uncinata, etc*.).

The upper part of the forest belt, at altitudes of 900–1100 m above sea level, is formed by dark coniferous forests of cedar (*Pinus sibirica*) and fir. The lower tier is formed by *Vaccinium myrtillus, Bergenia crassifolia,*

Fig. 2. Views of landscapes and plant communities in the Barguzin Nature Reserve. A: Fir forest at the lake shore; B: alpine meadow at the lake shore; C: subalpine meadow; D: rock-field in subalpine belt; E: alpine meadow; F: scree on slope near timberline; G: rocky slopes near timberline; H: waterfall.

Empetrum nigrum, Gymnocarpium dryopteris and mosses (*Pleurozium schreberi* prevails). On stony sites, *Rhododendron aureum* is predominant. On the upper border of the forest and lower parts of the subalpine zone, birch (*Betula lanata*), fir, and fir-birch open woodlands with *Betula divaricata* and *Rhododendron aureum* are common. Extensive spaces are occupied by *Pinus pumila* thickets.

The subalpine belt with elements of the alpine complex extends from 1100–1500 m above sea level. In the lower part of the subalpine belt, vegetation is presented by sparse park fir and birch open woodlands and shrubs (*Pinus pumila* and *Rhododendron aureum* thickets). As we move up the slope, the open woodlands disappear and the bushes alternate with grass meadow communities. In general, the main area of the subalpine belt is occupied by meadows. Solid grass cover with a projective cover of 75–95% and a height of 50–80 cm is formed by mesophilic and hygrophilous species. The grass cover is dominated by *Caltha palustris, Doronicum altaicum, Geranium krylovii, Aquilegia glandulosa, Trollius asiaticus* and sometimes *Bergenia crassifolia*. Moss and lichen cover is usually not pronounced.

Alpine belt extends from 1500 m above sea level. Large areas are occupied by rocks and bare screes devoid of vegetation. In wet habitats, wet mountain tundra is covered with *Rhododendron aureum*, *Betula rotundifolia* and mosses (*Aulacomnium palustre, A. turgidum, Abietinella abietina, Racomitrium lanuginosum, Rhytidium rugosum, Polytrichastrum alpinum*, *etc.*). In dry habitats, gravel-lichen tundra is covered with *Dryas punctata* and *Festuca ovina*. The lichens are dominated by *Alectoria ochroleuca, Stereocaulon* ssp., *Thamnolia vermicularis, Cladonia* ssp., *Cetraria* ssp. Mesophytic grass meadows dominated by *Vaccinium myrtillus, Anemonastrum sibiricum* and *Diphaziastrum alpinum* (sometimes also with *Festuca ovina* and *Bergenia crassifolia*) are widespread. In the moss-lichen cover with a total projective cover of 40–70%, lichens of the genus *Cladonia* predominate with a small amount of moss. In the lower part of the alpine belt, significant areas are occupied by sparse shrub communities of *Rhododendron aureum, Pinus pumila, Betula divaricata* (Tyulina, 1949, 1976; Siplivinsky, 1967; Krivobokov, 2011).

Exploration of the moss flora of Barguzin Reserve

The study of moss flora of the Barguzin Reserve was started in 1956 by the standout Siberian bryologist L.V. Bardunov. Extensive moss collections were gathered in the course of a field work along Bol'shaya and Schumilikha Rivers and also on the shore of Baikal Lake. The processing results were included in the monograph "Moss flora of coasts and mountains of northern Baikal" (Bardunov, 1961). This publication also partially took into account the moss specimens collected earlier in the reserve by well-known botanists, namely G.I. Poplavskaya, L.P. Sergievskaya, V.N. Siplivinsky, V.N. Sukachev, L.N. Tyulina, and L.I. Lagutskaya, as well as by geobotanists of the Department of Biology of the East-Siberian Branch of the Siberian Department of the USSR Academy of Sciences. These collections were identified by leading bryologists of that time: L.I. Savich-Lyubitskaya, Z.N. Smirnova, A.S. Lazarenko, A.L. Abramova, and L.V. Bardunov. These specimens are stored in different herbaria, mainly in IRK and LE, partly in UUH, as well as in the herbarium of the Barguzin Reserve. Bardunov listed 134 moss species for the reserve, taking into account the available literature data and the data obtained from the collections.

In 2008 and 2009, L.V. Krivobokov carried out his geobotanical research in the reserve in Sem' Ozer valley and in the upper courses of Davsha and Shumilikha Rivers; he also collected mosses for relevés. These mosses were identified by D.Ya. Tubanova and the results were partially published in their joint papers (Tubanova & Krivobokov, 2010, 2017).

In 2014, O.M. Afonina, I.V. Czernyadjeva and Yu.S. Mamontov conducted bryological studies in the valley of the Shumilikha River, mainly in its upper reaches, as well as in the vicinity of Davsha village. During the processing of the collected materials, additional information was obtained on the moss flora of the reserve.

In the course of compiling the list of mosses of the reserve, we carried out a selective revision of moss collections in the herbaria of IRK and LE. Since publication of the moss flora of the reserve by Bardunov, an understanding of the volume of some systematic groups has changed significantly, mainly due to molecular phylogenetic approaches. These changes affected families such as Amblystegiaceae, Brachytheciaceae, Grimmiaceae, Pottiaceae, and the genera *Dicranum, Ditrichum, Hedwigia, Hygrohypnum, Orthotrichum, etc*. As a result, *Dicranum angustum* Lindb., *D. congestum* Brid., *Hedwigia ciliata* (Hedw.) P. Beauv., *Schistidium apocarpum* (Hedw.) Bruch, Schimp. & W. Gümbel., and *S. gracile* (Schleich.) Limpr. were excluded from the list of mosses of the reserve. Some erroneous records were also based on misidentified specimens, i.e. *Racomitrium heterostichum* (Hedw.) Brid. (reidentified as *Bucklandiella sudetica*), *Plagiothecium piliferum* (Sw.) Bruch, Schimp. & W. Gümbel. (reidentified as *Isopterygiopsis muelleriana*), *Psilopilum laevigatum* (Wahlenb.) Lindb. (reidentified by E.I. Ivanova as *Oligotrichum falcatum*).

In addition, some species listed for Barguzin Reserve in the Catalogue on mosses of the nature reserves of Russia (Ignatov *et al.*, 2004) should be excluded from the list, since they were based on the data of Bardunov (1960) for areas outside the reserve; these are *Cyrtomnium hymenophylloides* (Hubener) T.J. Kop., *Encalypta procera* Bruch, *Flexitrichum flexicaule* (Schwägr) Ignatov & Fedosov, *Meesia uliginosa* Hedw., *Myurella tenerrima* (Brid.) Lindb., *Orthothecium chryseon* (Schwägr. ex Schultes)

Bruch, Schimp. & W. Gümbel, *Seligeria brevifolia* (Lindb.) Lindb., and *Stereodon vaucheri* (Lesq.) Lindb. ex Broth. (*Hypnum vaucheri* Lesq.).

As a result, the list of mosses of the Barguzin Reserve was compiled; it includes 257 species.

LIST OF SPECIES

The species are arranged in alphabetical order. The names of the species follow Ignatov *et al*. (2006), taking into account recent changes in taxonomy. For the species earlier recorded for the reserve, references are provided, accomplished with the synonyms (in parentheses) in cases if the other name was given in publication(s). Then, the label data are provided, including locations (abbreviated as shown in the Fig. 1; some other locations are cited in full), followed by the habitat data, date of collection, and collector(s). If the specimen number is available, it is given in italics, and the herbarium(s) acronyms or full names are given in parentheses (except for specimens collected by Afonina and Czernyadjeva and stored in LE). The presence of reproductive organs and, in some cases, accompanying species are also noted. The asterisk indicates the species recorded for the reserve for the first time.

Abietinella abietina (Hedw.) M. Fleisch. – Bardunov, 1960: 138; 1961: 101; Ignatov *et al.*, 2004: 280. – Widespread species, grows in dry and light forests, in communities of *Pinus pumila*, in mountain tundra, on rocks.

Amblystegium serpens (Hedw.) Bruch, Schimp. & W. Gümbel – Bardunov, 1961: 103. – **S-m**: spruce-fir forest, on soil, 15.VII.2014, Czernyadjeva *63-14*.

Amphidium lapponicum* (Hedw.) Schimp. – **S-u: damp rock outcrops near waterfall, 13.VII.2014, Afonina *2614*; south-faced rock outcrops near lake shore, 14.VII.2014, Afonina *3414*; rock outcrops on lake shore, niches between stones, 14.VII.2014, Czernyadjeva *62-14*.

A. mougeotii* (Bruch, Schimp. & W. Gümbel) Schimp. – **S-u: vertical rock surface, in fissures, with *Dicranum montanum*, 14.VII.2014, Afonina *3014*; south-faced rock outcrops near lake shore, 14.VII.2014, Afonina *3414*.

Andreaea papillosa* Lindb. – **S-u: dry rock outcrops near waterfall, with sporophytes, 13.VII.2014, Afonina *2714*; vertical rock surface, in fissures, with sporophytes, 14.VII.2014, Afonina *3014*.

A. rupestris Hedw. – Bardunov, 1960: 138; 1961: 63; Ignatov *et al.*, 2004: 280. – **S-u**: rock outcrops on lake shore, on stones, 14.VII.2014, Czernyadjeva *62-14*.

Anomobryum nitidum* (Mitt.) A. Jaeger – **B-m: hot springs, on bare mud soil, in turf among *Brachythecium mildeanum,* 8.IX.1956, Bardunov *s.n.* (IRK, LE).

Arctoa fulvella* (Dicks.) Bruch, Schimp. & W. Gümbel – **S-u: dry bed of stream in fir forest, 13.VII.2014, Afonina *2514*.

Aulacomnium palustre (Hedw.) Schwägr. – Bardunov, 1960: 138; 1961: 91; Ignatov *et al.*, 2004: 284. – Widespread species, grows in wet swampy forests, willow thickets and yerniks, wet meadows, and sedge-moss bogs.

A. turgidum (Wahlenb.) Schwägr. – Bardunov, 1960: 138; 1961: 92; Ignatov *et al.*, 2004: 284. – Upper course of Kudalkan River, tributary of Kudaldy River, on rock, as admixture to *Sanionia uncinata* and *Hylocomium splendens*, 22.VIII.1959, Siplivinsky *s.n.* (Herbarium of Barguzin Reserve).

Barbula unguiculata* Hedw. – **B-m: hot springs, on bare mud soil, in turf among *Brachythecium mildeanum* with *Anomobryum nitidum,* 8.IX.1956, Bardunov *s.n.* (IRK, LE).

Bartramia deciduaefolia* Broth. & Yasuda – **S-u: vertical rock surface, in fissures, 14.VII.2014, Afonina *3014*; rock outcrops on lake shore, niches between stones, with *Dichodontium pellucidum*, 14.VII.2014, Czernyadjeva *62-14*.

B. ithyphylla Brid. – Bardunov, 1960: 138; 1961: 93; Ignatov *et al*., 2004: 284. – **S-u**: dry rock outcrops near waterfall, 13.VII.2014, with sporophytes, Afonina *2714*; same place, Czernyadjeva *58-14*; on lake shore, rock outcrops and niches between stones, with sporophytes, 14.VII.2014, Czernyadjeva *61-14, 62-14*.

B. pomiformis Hedw. – Bardunov, 1961: 93-4. – **D-m**: *Pinus sibirica*-fir forest with *Bergenia crassifolia*, with sporophytes, 22.VIII.2008, Krivobokov *4* (UUH).

Blindia acuta* (Hedw.) Bruch, Schimp. & W. Gümbel – **S-u: damp rock outcrops near waterfall, 13.VII.2014, Afonina *2614* and on stones, 13.VII.2014, Czernyadjeva *58-14*; rock outcrops on lake shore, niches between stones, 14.VII.2014, Czernyadjeva *62-14*.

Brachytheciastrum collinum* (Schleich. ex Müll. Hal.) Ignatov & Huttunen – **S-u: rock outcrops on lake shore, niches between stones, 14.VII.2014, Czernyadjeva *62-14.*

B. velutinum* (Hedw.) Ignatov & Huttunen – **S-u: on rock surface, 14.VII.2014, Afonina *3014*.

Brachythecium baicalense* Ignatov – **B-m: hot springs, aspen forest with *Pinus sibirica,* on aspen trunks, 2.VII.1956, Bardunov *s.n.* (IRK, LE).

B. cirrosum (Schwägr.) Schimp. (*Cirriphyllum cirrosum* (Schwägr.) Grout) – Bardunov, 1960: 138; 1961: 109; Ignatov *et al.*, 2004: 286. – **S-u**: rock outcrops near waterfall, 14.VII.2014, Afonina *3014.*

B. glareosum (Bruch ex Spruce) Bruch, Schimp. & W. Gümbel – Bardunov, 1961: 107. – Recorded by Bardunov from the middle course of Bol'shaya River; in our collections it is absent.

B. mildeanum (Schimp.) Schimp. – Bardunov, 1961: 107. – **B-m**: hot springs, on bare mud soil, 8.IX.1956, Bardunov *s.n.* (IRK, LE).

B. rivulare* Bruch, Schimp. & W. Gümbel – **D-u: tall-herb meadow near creek, 17.VII.2009, Krivobokov *25* (UUH). **S-u**: rock outcrops near waterfall, niches between stones, 13.VII.2014, Czernyadjeva *58-14*.

B. salebrosum (F. Weber & D. Mohr) Bruch, Schimp. & W. Gümbel – Bardunov, 1960: 138; 1961: 107; Ignatov *et al.*, 2004: 286. – **B-m**: birch forest, on stones, 21.VI.1985, Bardunov *s.n.* (LE). **D-s**: on outcrops, 17.VII.2014, Afonina *3714*.

Bryoerythrophyllum recurvirostrum (Hedw.) P.C. Chen – Bardunov, 1961: 80. – **D-s**: on outcrops, with sporophytes, 17.VII.2014, Afonina *3714*.

Bryum argenteum Hedw. – Bardunov, 1961: 88. – **D-s**: rock outcrops in coniferous forest, on bare soil between stones, 17.VII.2014, Czernyadjeva *64-14.*

B. creberrimum* Tayl. – **B-l: Kurkavka Creek, on fallen tree above water, with sporophytes, 30.VI.1956, Bardunov *s.n.*, det. V.I. Zolotov (IRK).

B. elegans* Nees – **S-u: rock outcrops near waterfall, 14.VII.2014 Afonina *3014*; on stones, with *Hymenoloma crispula, Paraleucobryum longifolium*, Czernyadjeva *58-14*; rock outcrops on lake shore, niches between stones, 14.VII.2014, Czernyadjeva *62-14*.

B. lonchocaulon Müll. Hal. (*Bryum cirrhatum* Hoppe & Hornsch.) – Bardunov, 1961: 88. – **B-m**: hot springs, aspen forest with *Abies sibirica* and *Pinus sibirica*, on rotting birch trunk, with sporophytes, 2.VII.1956, Bardunov *n.s.* (IRK).

B. neodamense* Itzigs. – **S-u: rock outcrops on lake shore, on damp stone, 14.VII.2014, Czernyadjeva *62-14*.

B. pseudotriquetrum (Hedw.) P. Gaertn., B. Mey. & Scherb. – Bardunov, 1960: 138; 1961: 87; Ignatov *et al.*, 2004: 290. – **D-l**: sedge-moss fen with *Betula* sp., 24.VII.2009, Krivobokov *53* (UUH). **S-u**: damp rock outcrops near waterfall, 13.VII.2014, Afonina *2614*; same place, on stones near water, with *Oncophorus virens, Ochyraea alpestris*, 13.VII.2014, Czernyadjeva *58-14*. **SO**: goltsy, subalpine meadow, 15.VII.2009, Krivobokov *12* (UUH).

B. weigelii Spreng. – Tubanova & Krivobokov, 2010: 277-278. – **D-u**: sedge-forb-moss bog, 12.VII.2009, Krivobokov; same place, subalpine meadow, 12.VII.2009 Krivobokov; same place, forb-birch forest, 13.VII.2009, Krivobokov (UUH). **S-u**: moss community along bed of stream under waterfall, 13.VII.2014, Afonina *2914*; rocky bed of stream, 14.VII.2014, Afonina *3314*; on dry rocks and boulders, 14.VII.2014, Afonina *3514*; lake shore, near water, 14.VII.2014, Czernyadjeva *61-14*.

Bucklandiella macounii* (Kindb.) Bedn.-Ochyra & Ochyra subsp. *alpina* (E. Lawton) Bedn.-Ochyra & Ochyra – **S-u: lake shore, on stones, with *Lophozia* sp., with sporophytes, 14.VII.2014, Czernyadjeva *61-14*.

B. microcarpa (Hedw.) Bedn.-Ochyra & Ochyra (*Racomitrium ramulosum* Lindb., *R. microcarpon* (Hedw.) Brid.) – Bardunov, 1960: 140; 1961: 83; Ignatov *et al.*, 2004: 340. – **D-u**: forest with *Pinus sibirica*, 17.VII.2009, Krivobokov *27* (UUH). **S-u**: dry rocky outcrops near waterfall, 13.VII.2014, Afonina *2614;* same place, on stones, Czernyadjeva *58-14*; rock outcrops on lake shore, niches between stones, 14.VII.2014, Czernyadjeva *62-14*. **S-m**: mixed forest with *Abies sibirica*, on stones and boulders, 13.VII.2014, Afonina *2414*; dry bad of stream in fir forest, 13.VII.2014, Afonina *2514*; lake shore, on stone, 15.VII.2014, Czernyadjeva *63-14*.

B. nitidula (Cardot) Bedn.-Ochyra & Ochyra – Afonina *et al.*, 2015: 604. – **S-u**: rock outcrops, 6.VII.2014, Afonina *3014*.

B. sudetica (Funck) Bedn.-Ochyra & Ochyra (*Racomitrium sudeticum* (Funck) Bruch, Schimp. & W. Gümbel) – Tubanova & Krivobokov, 2017: 244. – **SO**: goltsy, alpine meadow, 14.VII.2009, Krivobokov *8* (UUH). **S-u**: on stones in mixed forest, 13.VII.2014, Afonina *2414*; dry rock outcrops near waterfall, 13.VII.2014, with sporophytes, Afonina *2714;* same place, on stones, 13.VII.2014, Czernyadjeva *58-14*; rock outcrops near waterfall, 14.VII.2014, Afonina *3014*; south-faced rock outcrops near lake shore, 14.VII.2014, Afonina *3414;* same place, Czernyadjeva *61-14*; also in niches between stones, 14.VII.2014, Czernyadjeva *62-14*. Source of Tarkulik River, lake shore, 2.VIII.1962, Siplivinsky & Lagutskaya *s.n.* (IRK, LE).

Buxbaumia aphylla Hedw. – Bardunov, 1961: 66. – **S-u**: depression in spruce-fir forest, on bare soil, with *Ditrichum heteromallum*, with sporophytes, 15.VII.2014, Czernyadjeva *63-14*.

Calliergon giganteum (Schimp.) Kindb. – Bardunov, 1961: 104. – **B-m**: mouth of Nizhnyaya Zarodnaya Creek, in water of creek, 9.IX.1956, Bardunov, *s.n.* (IRK).

Calliergonella lindbergii (Mitt.) Hedenäs (*Breidlleria arcuata* (Lindb.) Loeske) – Bardunov, 1961: 114. – Shegnanda River, 9.VIII.1956, as admixture to *Oncophorus virens*, Bardunov *s.n.* (IRK).

Campyliadelphus chrysophyllus* (Brid.) R.S. Chopra – **S-u: rock outcrops near waterfall, niches between stones, 13.VII.2014, Czernyadjeva *58-14*.

Campylidium calcareum* (Crundw. & Nyholm) Ochyra – **B-m: hot spring, aspen forest with *Abies sibirica* and *Pinus sibirica*, on fallen aspen trunks, 2.VII.1956, with sporophytes, Bardunov *s.n.* (LE). Plants in specimens habitually and morphologically are close to *C. calcareum*, but the ecology is not quite suitable.

C. hispidulum (Brid.) Ochyra – Bardunov, 1961: 102. – **B-m**: hot springs, aspen forest with *Larix dahurica*, 2.VII.1956, Bardunov, Kaplin *s.n.* (IRK).

Campylium stellatum (Hedw.) C.E.O. Jensen – Bardunov, 1960: 138; 1961: 102; Ignatov *et al.*, 2004: 292. – **B-m**: hot springs, spruce forest, at base of *Picea obovata* trunk, 9.IX.1956, Bardunov *s.n.* (IRK).

Campylopus subulatus* Schimp. ex Milde – **S-u: dry rock outcrops near waterfall, 13.VII.2014, Afonina *2714*.

Ceratodon purpureus (Hedw.) Brid. – Bardunov, 1960: 138; 1961: 65; Ignatov *et al.*, 2004: 294. – Widespread species, grows predominantly in habitats with disturbed vegetation, constantly with sporophytes.

Climacium dendroides (Hedw.) F. Weber & D. Mohr – Bardunov, 1960: 138; 1961: 96; Ignatov *et al.*, 2004: 294. – **B-m**: hot spring, dark coniferous forest, as small admixture to *Plagiomnium ellipticum*, 18-19.VIII.1959, Siplivinsky *s.n.* (LE). **D-l**: spruce forest with *Calamagrostis* sp., 19.VII.2009, Krivobokov *39* (UUH).

Cnestrum alpestre* (Wahlenb.) Nyholm – **S-u: rock outcrops on lake shore, in crevices, with sporophytes, admixture to *Bartramia ithyphylla* and liverworts, 14.VII.2014, Czernyadjeva *62-14*.

C. glaucescens (Lindb. & Arnell) Holmen ex Mogensen & Steere (*Cynodontium glaucescens* (Lindb. & Arnell) Schimp.) – Bardunov, 1961: 69. – Recorded by Bardunov from the Davsha bay; in our collections it is absent.

C. schisti (F. Weber & D. Mohr) I. Hagen – Bardunov, 1961: 69. – **S-u**: moss community under rock outcrops, with sporophytes, 14.VII.2014, Afonina *3114*. **D-s**: on outcrops, with sporophytes, 17.VII.2014, Afonina *3714*.

Conostomum tetragonum* (Hedw.) Lindb. – **S-u: *Pinus pumila-Bergenia crassifolia* community, on rocks in hollow, 14.VII.2014, Mamontov *YuSM-443-6* (LE).

Cratoneuron filicinum (Hedw.) Roth – Bardunov, 1961: 101-102. – Recorded by Bardunov from the middle course of Bol'shaya River; in our collections it is absent.

Cynodontium asperifolium* (Lindb. & Arnell) Paris – **D-s: rock outcrops in coniferous forest, niches between stones, with sporophytes, 17.VII.2014, Czernyadjeva *64-14*.

C. strumiferum (Hedw.) Lindb. – Bardunov, 1961: 71. – **S-u**: vertical rock surface, 14.VII.2014, Afonina *3014*. **D-s**: rock outcrops in coniferous forest, niches between stones, with sporophytes, 17.VII.2014, Czernyadjeva *64-14*.

C. tenellum (Schimp.) Limpr. – Bardunov, 1960: 138; 1961: 70; Ignatov *et al.*, 2004: 296. – **S-u**: rock outcrops near waterfall, with sporophytes, 14.VII.2014, Afonina *3014*.

Dichodontium pellucidum* (Hedw.) Schimp. – **S-u: damp rock outcrops near waterfall, 13.VII.2014, Afonina *2614*; moss community along stream bed below waterfall, with *Bryum weigelii*, 13.VII.2014, Afonina *2914;* rock outcrops, on stones

near water, with *Ochyraea duriuscula*, 13.VII.2014, Czernyadjeva *58-14*; lake shore, niches between stones, 14.VII.2014, Czernyadjeva *61-14, 62-14*. **S-m**: mixed forest with *Abies sibirica*, dry stream bed, 13.VII.2014, Afonina *2514*.

Dicranella schreberiana (Hedw.) Hilp. ex H.A. Crum & L.E. Anderson (*Anisotecium schreberianum* (Hedw.) Dixon) – Bardunov, 1961: 68. – Recorded by Bardunov from the low course of Bol'shaya River; in our collections it is absent.

D. varia* (Hedw.) Schimp. – **B-m: hot springs, on bare mud soil, with *Anomobryum nitidum,* 8.IX.1956, Bardunov *s.n.* (IRK, LE).

D. subulata* (Hedw.) Schimp. – **S-u: dry rock outcrops near waterfall, with sporophytes, 13.VII.2014, Afonina, *2714*; moss community under rock outcrops, with sporophytes, 14.VII.2014, Afonina *3114*. **S-m**: depression in spruce-fir forest, on bare soil, with sporophytes, 15.VII.2014, Czernyadjeva *63-14*.

Dicranodontium denudatum (Brid.) E. Britton in R.S. Williams – Bardunov, 1960: 138; 1961: 68; Ignatov *et al.*, 2004: 298. – **S-u**: vertical rock surface, in crevices, among *Plagiothecium laetum*, 14.VII.2014, Afonina *3014*.

Dicranum acutifolium* (Lindb. & Arnell) C.E.O. Jensen – **S-u: moss community under rock outcrops, 14.VII.2014, Afonina *3114*.

D. bardunovii Tubanova & Ignatova – Tubanova & Krivobokov, 2017: 244. – **D-m**: forb-moss fir forest with *Pinus sibirica* and *Bergenia crassifolia,* 22.VIII.2008, Krivobokov *4* (UUH). **SO**: goltsy, on rock outcrops with community of *Pinus pumila, Vaccinium vitis-idaea* and lichens, 14.VII.2009, Krivobokov *10* (UUH).

D. bonjeanii De Not. – Tubanova, & Krivobokov, 2017: 244. – **D-u**: *Vaccinium myrtillus*-moss fir forest, 24.VIII.2008, Krivobokov *s.n.* (UUH); same place, alpine meadow with *Rhododendron aureum*, 15.VII.2009, Krivobokov *17* (UUH). **S-u**: lake shore, niches between stones, with *Sciuro-hypnum reflexum*, 14.VII.2014, Czernyadjeva *61-14.* **SO**: goltsy, forb-lichen yernik with *Bergenia crassifolia* and *Vaccinium myrtillus,* 15.VII.2009, Krivobokov *11* (UUH).

D. brevifolium (Lindb.) Lindb. – Tubanova & Krivobokov, 2017: 244. – **SO**: goltsy, alpine meadow*,* 14.VII.2009, Krivobokov *8* (UUH); same place, *Vaccinium myrtillus*-moss fir forest, 24.VIII.2008, Krivobokov *9* (UUH).

D. elongatum Schleich. ex Schwägr. – Bardunov, 1960: 138; 1961: 72; Ignatov *et al.*, 2004: 298. – **S-u**: on stones and rock outcrops near lake shore, 14.VII.2014, Afonina *3014*.

D. flexicaule Brid. – Ignatov *et al*., 2004: 298. – Rather common species, grows in forest belt in *Pinus sibirica* forest, fir forest, and in subalpine and alpine belts.

D. fragilifolium Lindb. – Bardunov, 1960: 138; 1961: 72; Ignatov *et al*., 2004: 298. – Valley of Birikan River, forb steppificaed-pine forest with juniper, 22.VII.2009, Krivobokov *43* (UUH).

D. fuscescens Turn. – Bardunov, 1960: 138; 1961: 72-73; Ignatov *et al*., 2004: 298. – **D-u**: *Pinus sibirica*-forest, 24.VIII.2008, Krivobokov *7* (UUH). **SO**: alpine meadow, 15.VII.2009, Krivobokov *13* (UUH). Valley of Birikan River, forb-pine forest with juniper, 22.VII.2009, Krivobokov *43* (UUH).

**D. japonicum* Mitt. – Source of Tarkulik River, rhododendron-lichen tundra, with sporophytes, 2.VIII.1962, Siplivinsky, Lagutskaya *s.n.* (IRK, LE).

D. majus Sm. – Bardunov, 1961: 74. – **S-u**: rock outcrops near waterfall, on stones, 13.VII.2014, Czernyadjeva *58-14*. Source of Tarkulik River, lake shore, 2.VIII.1962, Siplivinsky, Lagutskaya *s.n.* (IRK, LE).

D. montanum Hedw. (*Orthodicranum montanum* (Hedw.) Loeske) – Bardunov, 1961: 72. – **S-u**: rock surface, on stone, 14.VII.2014, Afonina *3014*.

D. polysetum Sw. – Bardunov, 1961: 74. – Rather common species, grows in various types of forests, with sporophytes.

D. scoparium Hedw. – Bardunov, 1961: 74; 1969: 138; Ignatov *et al*., 2004: 294. – **D-u**: bilberry-moss fir forest, 13.VII.2009, Krivobokov *5* (UUH); *Pinus sibirica*-forest, 17.VII.2009, Krivobokov *24* (UUH). Mouth of Kaban'ya River, alpine meadow and tundra, 13-14.VII.1963, Siplivinsky, Lagutskaya (Herbarium of Barguzin Reserve).

D. spadiceum J.E. Zetterst. – Bardunov, 1960: 138; 1961: 73; Ignatov *et al.*, 2004: 298. – **D-u**: *Pinus sibirica*-forest with fir, 17.VII.2009, Krivobokov *27* (UUH). **S-u**: moss community under rock outcrops, 14.VII.2014, Afonina *3114*; on dry rocks among *Hylocomiastrum pyrenaicum*, 14.VII.2014, Afonina *3614;* subalpine belt, *Pinus pumila*-lichen community on rock-field, 13.VII.2014, Mamontov, *YuSM-438-1-8* (LE). **SO**: goltsy, willow thickets with *Bergenia crassifolia*, 14.VII.2009, Krivobokov *7* (UUH).

D. undulatum Schrad. ex Brid. (*D. bergeri* Blandow) – Bardunov, 1960: 138; Ignatov *et al*., 2004: 298. – Shore of Baikal Lake, larch forest with *Pinus sibirica*, with sporophytes, 25.VII.2009, Krivobokov *60* (UUH).

Didymodon rigidulus Hedw. – Ignatov *et al.*, 2004: 300. – This species is reported for the reserve only by Ignatov *at al*. (2004), in our collections it is absent.

Distichium capillaceum (Hedw.) Bruch, Schimp. & W. Gümbel – Bardunov, 1960: 139; 1961: 67; Ignatov *et al*., 2004: 302. – **D-s**: on outcrops, 17.VII.2014, Afonina *3714*. **S-u**: lake shore, niches between stones, 14.VII.2014, Czernyadjeva *61-14, 62-14*. Widespread species, Bardunov (1961) notes that it is common in the coastal belt of Baikal lake and in alpine belt; in the middle part of forest belt is more rare.

Ditrichum heteromallum* (Hedw.) E. Britton – **S-m: depression in spruce-fir forest, on bare soil, with *Buxbaumia aphylla,* with sporophytes, 15.VII.2014, Czernyadjeva *63-14*.

Encalypta ciliata* Hedw. – **D-s: on outcrops, as an admixture to *Cnestrum schisti*, with sporophytes, 17.VII.2014, Afonina *3714*. **S-u**: moss community under rock outcrops, with sporophytes, 14.VII.2014, Afonina *3114*. Record of the species by Ignatov *et al*. (2004) for the reserve is probably erroneous as far as it based on data of Bardunov (1960, 1961) for the upper course of Tompuda River, territory outside the reserve.

E. rhaptocarpa* Schwägr. – **S-u: moss community under rock outcrops, as an admixture to *E. ciliata*, with sporophytes, 14.VII.2014, Afonina *3114.* The record of this species by Ignatov *et al*. (2004) is probably based on data of Bardunov (1960, 1961) for the upper course of Tompuda River, territory outside the reserve.

Eurhynchiastrum pulchellum (Hedw.) Ignatov & Huttunen (*Eurhynchium pulchellum* (Hedw.) Jenn.) – Bardunov, 1961: 110; Ignatov *et al.*, 2004: 304. – **D-u**: dark coniferous forest, 23.VII.1959, *Sergievskaya, Siplivinsky s.n.* (Herbarium of Barguzin Reserve). **D-m**: fir forest with *Pinus sibirica* and *Bergenia crassifolia*, 22.VIII.2008, Krivobokov *4* (UUH). **D-s**: on outcrops, 17.VII.2014, Afonina *3714*; rock outcrops in coniferous forest, niches between stones, 17.VII.2014, Czernyadjeva *64-14*. Rather common species in the territory of the reserve.

Fissidens osmundoides* Hedw. – **S-u: in niches of damp rock outcrops near waterfall, 13.VII.2014, Afonina *2614*; same place, Czernyadjeva *58-14* and Mamontov *YuSM-436-5-1* (LE).

Fontinalis antipyretica Hedw. – Bardunov, 1961: 96. – **D-s**: shoreline of Baikal, 19.VII.2014, Afonina *4014*.

Funaria hygrometrica Hedw. – Bardunov, 1960: 139; 1961: 84; Ignatov *et al.*, 2004: 308. – **B-m**: hot springs, on site of the old fireplace, with sporophytes, 2.VII.1956, *Bardunov s.n.* (IRK).

Grimmia alpestris* (F. Weber & D. Mohr) Schleich. – **S-u: dry rock outcrops near waterfall, 13.VII.2014, Afonina *2714*; alpine meadow, bed of stream, with sporophytes, 14.VII.2014, Afonina *3614*; lake shore, on stones, with sporophytes, 14.VII.2014, Czernyadjeva *61-14, 62-14*. **S-m**: mixed forest with *Abies sibirica*, on stones, 13.VII.2014, Afonina *2414*.

G. anomala Hampe ex Schimp. – Afonina *et al.*, 2015: 604. – **S-u**: rock outcrops, 14.VII.2014, Afonina *3014*; rock outcrops on lake shore, on stones, 14.VII.2014, Czernyadjeva *62-14*.

G. elatior* Bruch ex Bals.-Criv. & De Not. – **S-u: rock outcrops on lake shore, on stones, 14.VII.2014, Czernyadjeva *62-14*.

G. longirostris Hook. (*Grimmia ovata* auct. non F. Weber & D. Mohr) – Bardunov, 1960: 139; 1961: 81; Ignatov *et al.*, 2004: 308. – **D-s**: rock outcrops in coniferous forest, on stones, with sporophytes, 17.VII.2014, Czernyadjeva *64-14*. **S-u**: dry rock outcrops near waterfall, 13.VII.2014, Afonina *2714*.

G. mollis* Bruch, Schimp. & W. Gümbel – **S-u: on dry rocks and boulders, 14.VII.2014, Afonina *3514*.

G. muehlenbeckii* Schimp. – **D-s: on outcrops, 17.VII.2014, Afonina *3714*. **S-u**: rock outcrops near waterfall, on stones, with sporophytes, 13.VII.2014, Czernyadjeva *58-14*. **S-m**: on boulders in mixed forest, 13.VII.2014, Afonina *2414*.

G. torquata Drumm. – Afonina et al., 2015: 604. – **S-u**: rock outcrops, 6.VII.2014, Afonina *3014*; rock outcrops on lake shore, niches between stones, 14.VII.2014, Czernyadjeva *62-14*.

G. unicolor Hook. – Bardunov, 1960: 139; 1961: 81; Ignatov *et al*., 2004: 310. – **S-l**: shore of Baikal Lake, estuary of Shumilikha River, on boulder, with sporophytes, 14.VI.1956, Bardunov *s.n.* (IRK, LE).

Gymnostomum aeruginosum* Sm. – **S-u: rock outcrops near waterfall, niches between stones, 13.VII.2014, Czernyadjeva *58-14*.

Hamatocaulis vernicosus (Mitt.) Hedenäs (*Drepanocladus vernicosus* (Mitt.) Warnst.) – Tubanova & Krivobokov, 2017: 244. – **D-l**: sedge-moss bog in light larch forest*,* 24.VII.2009, Krivobokov *51, 52* (UUH).

Hedwigia emodica* Hampe ex Müll. Hal. var. *echinata* Ignatova & Ignatov – **D-s: rock outcrops in coniferous forest, on stones, with sporophytes, 17.VII.2014, Czernyadjeva *64-14*, det. E.A. Ignatova.

H. mollis* Ignatova, Ignatov & Fedosov – **D-s: rock outcrops, 17.VII.2014, Afonina *3714*.

Helodium blandowii* (F. Weber & D. Mohr) Warnst. – **D-s: tall herb meadow in forest belt, 17.VII.2009, Krivobokov *25* (UUH).

Herzogiella turfacea (Lindb.) Z. Iwats. (*Isopterygium turfaceum* (Lindb.) Lindb.) – Bardunov, 1961: 112-113. – Recorded by Bardunov from the middle course of Bol'shaya River; in our collections it is absent.

Hygroamblystegium tenax (Hedw.) Jenn. – Bardunov, 1961: 102-103. – Recorded by Bardunov from the mouth of Shumilikha River, Davsha bay and low course of Bol'shaya River, in our collections it is absent.

Hygrohypnella ochracea* (Turner ex Wilson) Ignatov & Ignatova (*Hygrohypnum ochraceum* (Turner ex Wilson) Loeske) – **S-u: on stones in water, 20.IX.1939, Tyulina *s.n.* (LE); lake shore, on stones near water, 14.VII.2014, Czernyadjeva *61-14*. Earlier this species wasn't reported for the reserve, since the specimen was originally identified by A.S. Lazarenko as *Hygrohypnum dilatatum* and later reidentified by D.W. Jamieson as *Hygrohypnum ochraceum.*

H. polare* (Lindb.) Ignatov & Ignatova – **S-u: bed of stream, 15.VII.2014, Afonina *3914*.

Hygrohypnum luridum (Hedw.) Jenn. – Bardunov, 1961: 106. – In our collections this species is absent, and Bardunov recorded it for the mouth of Schumilikha River.

Hylocomiastrum pyrenaicum* (Spruce) M. Fleisch. – **S-u: moss community under rock outcrops, 14.VII.2014, Afonina *3114*; on dry rocks, 14.VII.2014, Afonina *3614*; rock outcrops near waterfall, on stones, 13.VII.2014, Czernyadjeva *58-14*; nival location, niches between stones, 13.VII.2014, Czernyadjeva *60-14*; lake shore, niches between stones, 14.VII.2014, Czernyadjeva *61-14*, *62-14*. Upper course of Kudalkan River (tributary of Kudaldy River), on rocks (as an admixture to *Sanionia uncinata*), 22.VIII.1959, Siplivinsky *s.n.* (LE). Upper course of Talamush River (tributary of Bol'shaya River), wet rock surfaces, 26.VII.1962, Siplivinsky, Lagutskaya *s.n.* (IRK, LE).

Hylocomium splendens (Hedw.) Bruch, Schimp. & W. Gümbel – Bardunov, 1960: 139; 1961: 115; Ignatov *et al.*, 2004: 314. – Common, widespread species, grows in various types of forests, often forms large cushions; grows also in communities of *Pinus pumila* and in mountain tundra.

Hymenoloma crispulum (Hedw.) Ochyra (*Dicranoweisia crispula* (Hedw.) Milde) – Bardunov, 1961: 71; Ignatov *et al*., 2004: 298. – **S-u**: on dry rocks and boulders, 14.VII.2014, Afonina *3514*; rock outcrops near waterfall, on stones, with *Paraleucobryum longifolium,* 13.VII.2014, Czernyadjeva *58-14*; nival location, on stones, 13.VII.2014, Czernyadjeva *60-14*; lake shore, on stones and rock outcrops, 14.VII.2014, Czernyadjeva *61-14*, *62-14.* – **S-m**: mixed forest with *Abies sibirica*, on stones, 13.VII.2014, Afonina *2414*. Often with sporophytes.

Hymenostylium recurvirostrum* (Hedw.) Dixon – **S-u: valley of Shumilikha River, near waterfall, subalpine belt, *Salix* sp.-*Pinus pumila*-grass community, on rocks above waterfall, 13.VII.2014, Mamontov *YuSM-436-6-12* (LE). The record of this species by Ignatov *et al.* (2004) is probably based on data of Bardunov (1960, 1961) for the upper course of Tompuda River, territory outside the reserve.

Hypnum cupressiforme Hedw. – Bardunov, 1960: 139; 1961: 114; Ignatov *et al*., 2004: 314. – **D-s**: rock outcrops in coniferous forest, on stones, 17.VII.2014, Czernyadjeva *64-14*. **S-u**: on rock surface, 14.VII.2014, Afonina *3014*.

Isopterygiopsis alpicola* (Lindb. & Arnell) Hedenäs – **S-u: on stone below waterfall, 14.VII.2014, Afonina *3014*; rock outcrops near waterfall, niches between stones, 13.VII.2014, Czernyadjeva *58-14*; lake shore, niches between stones, with *I. pulchella*, 14.VII.2014, Czernyadjeva *61-14*.

I. muelleriana* (Schimp.) Z. Iwats. – **D-s: rock outcrops in coniferous forest, niches between stones, 17.VII.2014, Czernyadjeva *64-14*. **S-u**: vertical rock surface near waterfall, 14.VII.2014, Afonina *3014*. The record of Ignatov *et al.* (2004)

is probably based on data for the middle course of Tompuda River, a territory outside the reserve.

I. pulchella* (Hedw.) Z. Iwats. – **S-u: dry rock outcrops near waterfall, 13.VII.2014, Afonina *2714*; lake shore, rock outcrops, niches between stones, 14.VII.2014, Czernyadjeva *61-14,* 62-*14*. Previous record of the species for the reserve (Ignatov *et al.,* 2004) should be considered erroneous.

Iwatsukiella leucotricha* (Mitt.) W.R. Buck & H.A. Crum – **S-u: rock surface near waterfall, 14.VII.2014, Afonina *3014*; south-faced rock outcrops near lake shore, 14.VII.2014, Afonina *3414*.

Kiaeria blyttii* (Bruch, Schimp. & W. Gümbel) Broth. – **S-u: dry rock outcrops near waterfall, with sporophytes, 13.VII.2014, Afonina *2714*; moss community under rock outcrops, 14.VII.2014, Afonina *3114*.

K. glacialis* (Berggr.) I. Hagen – **S-u: vertical rock surface, in crevices, 14.VII.2014, Afonina *3014*. **S-m**: dry bed of stream in fir forest, 13.VII.2014, Afonina *2514*.

K. starkei* (F. Weber & D. Mohr) I. Hagen – **S-u: moss community under rock outcrops, with sporophytes, 14.VII.2014, Afonina *3114*; lake shore, on soil and rock outcrops, 14.VII.2014, Czernyadjeva *61-14, 62-14*. Sources of Medvezhij Creek (tributary of Tarkulik River), alpine meadow, 27.VII.1962, Siplivinsky, Lagutskaya *s.n.* (IRK, LE).

Leptobryum pyriforme (Hedw.) Wilson – Bardunov, 1960: 139; 1961: 87; Ignatov *et al.*, 2004: 318. – **B-m**: hot springs, aspen forest with *Abies sibirica*, on rotten wood, with sporophytes, as an admixture to *Bryum lonchocaulon*, 2.VII.1956, Bardunov *s.n.* (IRK). **D-s**: on outcrops, with *Ceratodon purpureus*, 17.VII.2014, Afonina *3714*.

Lescuraea incurvata (Hedw.) E. Lawton – Abasheev *et al.,* 2013: 439. – **S-u**: rock outcrops near waterfall, on stones, 13.VII.2014, Czernyadjeva *58-14*; lake shore, on stones and rock outcrops, 14.VII.2014, Czernyadjeva *61-14, 62-14*. **S-m**: mixed forest with *Abies sibirica*, on stones, boulders and damp rock outcrops near waterfall, 13.VII.2014, Afonina *2614*. In the Red Data Book of Buryatia (Abasheev *et al*., 2013) this species is recorded for the upper course of Shumilikha River and Davshinskie goltsy.

L. patens* Lindb. – **B-m: upper course of Talamush River (tributary of Bol'shaya River), alpine meadow (few plants among *Lescuraea secunda*), 27.VII.1962, Siplivinsky, Lagutskaya *s.n.* (LE).

L. radicosa (Mitt) Mönk. – Kazanovsky, 1991: 460. – **D-u**: near timberline of fir forest, 29.VIII.1958, Tyulina, Ivanova *s.n.* (det. Bardunov) (LE). **S-u**: moss community under rock outcrops, 14.VII.2014, Afonina *3114*; on dry rocks and boulders, 14.VII.2014, Afonina *3514*.

L. saxicola (Bruch, Schimp. & W. Gümbel) Molendo (*L. mutabilis* (Brid.) Lindb. var. *saxicola* (Bruch, Schimp. & W. Gümbel) I. Hagen) – Bardunov, 1960: 139; 1961: 100-101; Ignatov *et al.*, 2004: 318. – **D-u**: *Pinus sibirica*-forest with *Abies sibirica* 17.VII.2009, Krivobokov *27* (UUH). **S -u**: dry rock outcrops near waterfall, 13.VII.2014, Afonina *2714*; on dry rocks and boulders, 14.VII.2014, Afonina *3514*; rock outcrops near waterfall, on stones, with sporophytes, 13.VII.2014, Czernyadjeva *58-14*; lake shore, on stones and rock outcrops, in niches between stones, 14.VII.2014, Czernyadjeva *61-14*; *62-14*.

L. secunda Arnell – Tubanova & Krivobokov, 2017: 244. – **D-u**: subalpine meadow, 16.VII.2009, Krivobokov *20* (UUH). **SO**: goltsy, alpine meadow with *Rhododendron aureum,* 14.VII.2009, Krivobokov *6, 13* (UUH).

Leucodon sciuroides (Hedw.) Schwägr. – Bardunov, 1958: 118-119; 1961: 96-97. – **B-m**: on south-faced granite rock, 9.IX.1956, Bardunov *s.n.* (IRK, LE).

**Lewinskya elegans* (Schwägr. ex Hook. & Grev.) F. Lara, Garilleti & Goffinet – Bol'shaya River, on poplar trunk, with sporophytes, and on branches of *Abies sibirica*, with sporophytes 1.VII.1956, Bardunov *s.n.* (IRK, LE).

L rupestris (Schleich. ex Schwägr.) F. Lara, Garilleti & Goffinet (*Orthotrichum rupestris* Schleich.ex Schwägr.) – Bardunov, 1960: 140; 1961: 95; Ignatov *et al.*, 2004: 326. – **B-l**: on dry boulders, with sporophytes, 14.VII.1956, Bardunov *s.n.* (IRK, LE).

L.* cf. *sordida* (Sull. & Lesq.) F. Lara, Garilleti & Goffinet – **D-s: on outcrops, 17.VII.2014, Afonina *3714*.

Loeskypnum badium* (Hartm.) H.K.G. Paul – **SO: system of Malyi Klyuch, alpine meadow, as an admixture to *Warnstorfia sarmentosa*, 25.VII.1959, Siplivinsky *s.n.* (LE).

Meesia triquetra* (Richter) Ångstr. – **D-l: sedge-moss fen, 24.VII.2009, Krivobokov *51, 52, 53* (UUH).

Mnium blytii* Bruch, Schimp. & W. Gümbel – **D-m: shore of Baikal Lake, south-faced rock outcrops, 14.VII.2014, Afonina *3414*.

M. lycopodioides* Schwägr. – **S-u: rock outcrops near waterfall, on stones covered with soil, with *Plagiothecium cavifolium*, 13.VII.2014, Czernyadjeva *58-14*.

M. marginatum (Dicks.) P. Beauv – Bardunov, 1961: 89; Ignatov *et al*., 2004: 320. – **D-s**: rock outcrops in coniferous forest, niches between stones, 17.VII.2014, Czernyadjeva *64-14*.

M. spinosum (Voit) Schwägr. (*Mnium serratum* Brid.) – Bardunov, 1960: 139; 1961: 88; Ignatov *et al*., 2004: 320. – **S-u**: moss community under rock outcrops, 14.VII.2014, Afonina *3114*.

M. spinulosum* Bruch, Schimp. & W. Gümbel – **D-m: *Abies sibirica* forest with *Pinus sibirica,* 22.VIII.2008, Krivobokov *4* (UUH).

M. thomsonii Schimp. (*Mnium orthorrhynchum* Müll. Hal.) – Bardunov, 1960: 139; 1961: 88; Ignatov *et al*., 2004: 322. – **S-u**: rock outcrops on lake shore, niches between stones, 14.VII.2014, Czernyadjeva *62-14.*

Myurella julacea (Schwägr.) Bruch, Schimp. & W. Gümbel – Bardunov, 1960: 139; 1961: 99; Ignatov *et al*., 2004: 322. – **B-m**: Nizhnyaya Zarodnaya River, granite rock, in crack, as an admixture to *Plagiopus oederianus*, 9.IX.1956, Bardunov *s.n.* (IRK).

Myuroclada maximowiczii (G.G. Borshch.) Steere & W.B. Schofield (*Myuroclada concinna* (Wils.) Besch.) – Bardunov, 1961: 109-110. – Recorded by Bardunov from the middle course of Bol'shaya River, in our collections it is absent.

Neckera pennata Hedw. – Bardunov, 1960: 140; 1961: 97; Ignatov *et al.*, 2004: 322. – **B-m**: hot spring, grass meadow, 15.VIII.1959, Siplivinsky *s.n.* (Herbarium of Barguzin Reserve). **D-s**: on outcrops, 17.VII.2014, Afonina *3714*.

Niphotrichum canescens (Hedw.) Bednarek-Ochyra & Ochyra (*Racomitrium canescens* (Hedw.) Brid.) – Bardunov, 1960: 140; 1961: 84; Ignatov *et al.*, 2004: 338. – **S-u**: on dry rocks and boulders, 14.VII.2014, Afonina *3614.* **SO**: goltsy, willow thickets with *Bergenia crassifolia* on rock-field, with sporophytes, 14.VII.2009, Krivobokov *7* (UUH).

Nyholmiella obtusifolia (Brid.) Holmen & Warncke (*Orthotrichum obtusifolium* Brid.) – Bardunov, 1961: 95. – **B-m**: on poplar trunks, with *Lewinskya elegans*, 1.VII.1956, Bardunov *s.n.* IRK, LE).

Ochyraea alpestris* (Hedw.) Ignatov & Ignatova – **S-u: rock outcrops near waterfall, on stones in water, 13.VII.2014, Czernyadjeva *58-14*.

O. duriuscula (De Not.) Ignatov & Ignatova (*Hygrohypnum dilatatum* auct. non (Wilson) Loeske, *H. duriusculum* (De Not.) D.W. Jamieson) – Bardunov, 1960: 139; 1961: 107; Ignatov *et al*., 2004: 314. – **S-u**: near waterfall, on stones, with sporophytes, 29.IX.1939, Tyulina *s.n.* (LE); on stones in water in river bed, 19.IX.1939, Tyulina *s.n.* (LE).

Oligotrichum falcatum Steere – Afonina *et al.*, 2015: 604. – **B-u**: goltsy, on rocks, 11.IX.1956, Bardunov, Kirpichev *s.n.* (LE). **S-u**: rocky slope, between boulders, 13.VII.2014, Afonina *2514*; rock outcrops on lake shore, niches between stones, with *Pohlia andrewsii*, 14.VII.2014, Czernyadjeva *62-14*. The specimen collected by Bardunov and Kirpichev was first determined and published as *Psilopilum laevigatum* (Wahlenb.) Lindb. (Bardunov, 1961). However, it was later reidentified by E.I. Ivanova as *Oligotrichum falcatum*.

Oncophorus integerrimus* Hedenäs – **S-u: damp rock outcrops near waterfall, with *Bryum pseudotriquetrum*, 13.VII.2014, Afonina *2614*; rocky stream bed, 14.VII.2014, Afonina *3314*.

O. virens (Hedw.) Brid. – Bardunov, 1961: 71. – **S-l**: on big stones near water, 14.VII.1956, with sporophytes, Bardunov (IRK); Shagnanda River, 9.VIII.1956, *s.n.* Bardunov (IRK). **S-u**: rock outcrops near waterfall, on stones, 13.VII.2014, Czernyadjeva *58-14.*

Ortotrichum anomalum* Hedw. – **S-l: Valukan cape, on coastal boulders, with sporophytes, 7.VII.1956, Bardunov *s.n.* (IRK, LE).

Oxystegus tenuirostris* (Hook. & Taylor) A.J.E. Sm. – **S-u: rock outcrops near waterfall, on stones, with *Plagiothecium cavifolium*, 13.VII.2014, Czernyadjeva *58-14*; rock outcrops on lake shore, on stones, 14.VII.2014, Czernyadjeva *62-14*. **S-m**: mixed forest with *Abies sibirica*, on stones, 13.VII.2014, Afonina *2414*.

Paludella squarrosa* (Hedw.) Brid. – **D-u: bog with *Betula* sp., 16.VI.1943, Tyulina *833* (LE); swamping tall herb-birch forest, 23.VIII.2008, Krivobokov *5* (UUH); sedge-moss fen, 12.VII.2009, Krivobokov *1* (UUH). **S-u**: alpine belt, 27.IX.1939, Tyulina *s.n.* (LE). **SO**: alpine meadow, 25.VII.1959, Siplivinsky *s.n.*, det. A.L. Abramova (LE).

Palustriella falcata* (Brid.) Hedenäs – **S-u: rock outcrops near waterfall, on stones near water, with *Philonotis seriata*, 13.VII.2014, Czernyadjeva *58-14*.

Paraleucobryum enerve* (Thed.) Loeske – **S-m: stony slope, on stones in fir forest, 15.VII.2014, Afonina *3814*.

P. longifolium (Hedw.) Loeske – Bardunov, 1960: 140; 1961: 75; Ignatov *et al.*, 2004: 326. – **S-u**: moss community under rock outcrops, 14.VII.2014, Afonina *3114*; rock outcrops near waterfall, on stones, with sporophytes, with *Hymenoloma crispulum,* 13.VII.2014, Czernyadjeva *58-14*; lake shore, on stones and rock outcrops 14.VII.2014, Czernyadjeva *61-14, 62-14*. **S-m**: stony slope, fir forest, on stones, 15.VII.2014, Afonina *3814*.

Philonotis fontana (Hedw.) Brid. – Bardunov, 1960: 140; 1961: 94; Ignatov *et al.*, 2004: 328. – **D-m**: swamping tall herbaceous-birch forest, 13.VIII.2009, Krivobokov *4* (UUH). **S-u**: damp rock outcrops near waterfall, 13.VII.2014, Afonina *2614*; same place, Czernyadjeva *58-14*; alpine meadow, 13.VII.2014, Afonina *2814*; alpine meadow, bed of stream, 14.VII.2014, Afonina *3514*; lake shore, on stones near water, 14.VII.2014, Czernyadjeva *61-14, 62-14*.

P. seriata Mitt. – Tubanova & Krivobokov, 2017: 244. – **D-u**: tall grass subalpine meadow, 12.VII.2009, Krivobokov *2* (UUH). **D-m**: tall grass meadow in forest belt, 17.VII.2009, Krivobokov *25* (UUH). **D-s**: on outcrops, 17.VII.2014, Afonina *3714*. **S-u**: outcrops near waterfall, on stones near water, with *Palustriella falcata*, 13.VII.2014, Czernyadjeva *58-14*.

P. tomentella Molendo – Bardunov, 1960: 140; 1961: 94; Ignatov *et al.*, 2004: 328. – **S-u**: goltsy, swampy alpine meadow, 26.IX.1939, Tyulina *s.n.* (IRK).

Physcomitrium sphaericum (C.F. Ludw. ex Schkuhr) Brid. – Bardunov, 1961: 84; 1969: 146-148. – **B-m**: hot spring, moist silty soil, 2.VII.1956, Bardunov *s.n.* (IRK, Herbarium of Barguzin Reserve).

Plagiomnium acutum (Lindb.) T.J. Kop. (*Mnium trichomanes* Mitt.) – Bardunov, 1961: 90; Abasheev *et al*., 2013: 433. – **B-m**: hot spring: on bare soil, with *Marshantia polymorpha*, 7.IX.1956, Bardunov, Kirpichev *s.n.* (IRK). This species is included into Red data book of Republic of Buryatia (Abasheev *et al.*, 2013), it is recorded for the upper course of Shumilikha River, the middle course of Bol'shaya River and Davshinskie goltsy.

P. confertidens (Lindb. & Arnell) T.J. Kop. (*Mnium confertidens* (Lindb. & Arnell) Kindb.) – Bardunov, 1961: 90. – Recorded by Bardunov from the middle course of Bol'shaya River; in our collections it is absent.

P. cuspidatum (Hedw.) T.J. Kop. – Bardunov, 1961: 89. – Recorded by Bardunov from the middle course of Bol'shaya River, in our collection it is absent.

P. drummondii Bruch, Schimp. & W. Gümbel – Bardunov, 1961: 89. – **B-m**: *Pinus sibirica*-fir forest, with sporophytes, 2.VII.1956, Bardunov *s.n.* (LE); fir-forest with *Callamagrostis* sp. and ferns, 25.VIII.2008, Krivobokov *12* (UUH).

P. ellipticum (Brid.) T.J. Kop. (*Mnium rugicum* Laurer) – Bardunov, 1961: 90. – **D-u**: tall herb meadow, 17.VII.2009, Krivobokov *25* (UUH); herb subalpine meadow, 16.VII.2009, Krivobokov *19* (UUH). **D-l**: herb spruce forest, 19.VII.2009, Krivobokov *39* (UUH). **B-m**: hot spring, dark coniferous forest, 16-18.VIII.1959, Siplivinsky *s.n.* (LE, Herbarium of Barguzin Reserve).

**P. medium* (Bruch, Schimp. & W. Gümbel) T.J. Kop. – In LE there is specimen collected by I. Korneev 11.VI.1938 in Barguzin district, Snezhny Creek. Supposedly this location belongs to the reserve.

P. rostratum (Schrad.) T.J. Kop. (*Mnium rostratum* Schrad., *M. longirostre* Brid.) – Bardunov, 1961: 90. – Recorded by Bardunov from the mouth of Sosnovka River; in our collections it is absent.

Plagiopus oederianus (Sw.) H.A. Crum & L.E. Anderson – Bardunov, 1960: 140; 1961: 93; Ignatov *et al*., 2004: 330. – Nizhne-Zarodnaya River, south-faced wall of granite rock, in crack, with sporophytes, 9.IX.1956, Bardunov *s.n.* (IRK).

Plagiothecium cavifolium* (Brid.) Z. Iwats. – **D-s: on outcrops, 17.VII.2014, Afonina *3714*. **S-u**: damp rocky outcrops near waterfall, 13.VII.2014, Afonina *2614*; same place, on stones, with *Mnium lycopodioides, Oxystegus tenuirostris,* 13.VII.2014, Czernyadjeva *58-14*; vertical rock surface, in crevices, 14.VII.2014, Afonina *3014*; rock outcrops near lake shore, 14.VII.2014, Afonina *3414*.

P. denticulatum (Hedw.) Bruch, Schimp. & W. Gümbel – Bardunov, 1960: 140; 1961: 111; Ignatov *et al*., 2004: 330. – **S-u**: vertical rock surface, in crevices, 14.VII.2014, Afonina *3014*; lake shore, niches between stones, 14.VII.2014, Czernyad-

jeva *61-14*, *62-14*. **S-m**: mixed forest with *Abies sibirica*, on stones, 13.VII.2014, Afonina *2414*; lake shore, niches between stones, 15.VII.2014, Czernyadjeva *63-14*.

P. laetum Bruch, Schimp. & W. Gümbel – Bardunov, 1961: 112. – **D-s**: rock outcrops in coniferous forest, niches between stones, 17.VII.2014, Czernyadjeva *64-14*. **S-u**: dry rock outcrops near waterfall, 13.VII.201, Afonina *2714*; vertical rock surface, in fissures, with *Dicranodontium denudatum*, 14.VII.2014, Afonina *3014*. **S-m**: stony slope, fir forest, on stones, 15.VII.2014, Afonina *3814*.

Platydictya jungermannioides (Brid.) H.A. Crum (*Amblystegiella jungermannioides* (Brid.) A.J.E. Sm.) – Bardunov, 1960: 138; 1961: 103; Ignatov *et al.*, 2004: 330 – **S-u**: near waterfall, subalpine belt, *Salix* sp.-*Pinus pumila*-grass community, on rocks above waterfall, 5.VII.2014, Mamontov *YuSM-436-6-13* (LE).

Platygyrium repens (Brid.) Bruch, Schimp. & W. Gümbel – Bardunov, 1961: 113. – **D-s**: rock outcrops in coniferous forest, niches between stones, 17.VII.2014, Czernyadjeva *64-14*.

Platyhypnum duriusculum* (De Not.) Ochyra – **S-u: damp rock outcrops near waterfall, 13.VII.2014, Afonina *2614*; same place, rock outcrops, on stones in water, with *Dichodontium pellucidum,* Czernyadjeva *58-14*; lake shore, on stones in water, 14.VII.2014, Czernyadjeva *61-14*; alpine meadow, stream bed with tall herbs, 14.VII.2014, Afonina *3514*. **D-s**: on outcrops, 17.VII.2014, Afonina *3714*. Bardunov (1961) reported for the reserve *Hygrohypnum dilatatum* based on specimen collected by Tyulina (LE) and identified by A.S. Lazarenko; however, this specimen later was reidentified by D.W. Jamieson as *Hygrohypnum ochraceum*.

Pleurozium schreberi (Brid.) Mitt. – Bardunov, 1960: 140; 1961: 111; Ignatov *et al.*, 2004: 332. – Common, widespread species, grows in various types of forests, often forms large cushions; grows also in communities of *Pinus pumila* and in mountain tundra.

Pogonatum dentatum* (Brid.) Brid. – **S-u: moss community under rock outcrops, with sporophytes, 14.VII.2014, Afonina *3114.* **S-m**: mixed forest with *Abies sibirica*, on stones, as admixture to *Pohlia* sp., 13.VII.2014, Afonina *2514*.

P. urnigerum (Hedw.) P. Beauv. – Bardunov, 1960: 140; Ignatov *et al.*, 2004: 332. – **S-u**: rock outcrops on lake shore, in niches between stones, 14.VII.2014, Czernyadjeva *62-14*. **SO**: goltsy, subalpine forb meadow with *Rhododendron aureum*, 14.VII.2009 and 15.VII.2009, Krivobokov *6, 13* (UUH); forb willow thickets with *Bergenia crassifolia* on rocky slope, 14.VII.2009, Krivobokov *7* (UUH).

Pohlia andrewsii* A.J. Shaw – **S-u: rock outcrops on lake shore, in niches between stones, with *Oligotrichum falcatum,* 14.VII.2014, Czernyadjeva *62-14*.

P. bulbifera* (Warnst.) Warnst. – **S-u: lake shore, on soil, few stems among *Kiaeria starkei*, 14.VII.2014, Czernyadjeva *61-14*.

P. annotina (Hedw.) Loeske – Bardunov, 1960: 140; 1961: 86; Ignatov *et al.*, 2004: 332. – In LE there is a specimen collected by Tyulina and identified by A.S. Lazarenko as *Pohlia annotina*, but gemmae are absent and it is impossible to identify it with confidence.

P. cruda (Hedw.) Lindb. – Bardunov, 1960: 140; 1961: 86; Ignatov *et al.*, 2004: 332. – This rather common species grows on fallen trees in forests, on banks of rivers and streams, in crevices of rocks, in areas with disturbed vegetation. Sporophytes frequent.

P. crudoides (Sull. & Lesq.) Broth. – Bardunov, 1960: 140; 1961: 86; Ignatov *et al.*, 2004: 332. – **S-u**: dry rock outcrops near waterfall, 13.VII.2014, Afonina *2714*; moss community under rock outcrops, with sporophytes, 14.VII.2014, Afonina *3114*; rock outcrops on lake shore, 14.VII.2014, Afonina *3414;* in same place, in niches between stones, with *Isopterygiopsis pulchella, Pohlia cruda*, 14.VII.2014, Czernyadjeva *62-14*.

P. drummondii* (Müll. Hal.) A.L. Andrews – **S-u: dry rock outcrops near waterfall, 13.VII.2014, Afonina *2714*; rocky stream bed, as admixture to *Rhizomnium pseudopunctatum*, 14.VII.2014, Afonina *3314*; rock outcrops on lake shore, between stones, 14.VII.2014, Czernyadjeva *62-14*.

P. elongata* Hedw. var. *elongata* – **D-u: tall herbaceous meadow near stream, 17.VII.2009, with sporophytes, Krivobokov *25* (UUH). **S-u**: rock outcrops on lake shore, niches between stones, with sporophytes, 14.VII.2014, Czernyadjeva *62-14*.

P. elongata* Hedw. var *greenii* (Brid.) A.J. Shaw – **S-u: lake shore, niches between stones, with sporophytes, 14.VII.2014, Czernyadjeva *61-14*.

P. lescuriana (Sull.) Grout – Tubanova & Krivobokov, 2010: 278. – **SO**: goltsy, forb yernik with *Vaccinium myrtillus* and *Bergenia crassifolia*, 15.VII.2009, Krivobokov *11* (UUH).

P. longicollis (Hedw.) Lindb. – Bardunov, 1961: 86. – **D-s**: rock outcrops in coniferous forest, niches between stones, with sporophytes, 17.VII.2014, Czernyadjeva *64-14*.

P. nutans (Hedw.) Lindb. – Bardunov, 1960: 140; 1961: 86; Ignatov *et al*., 2004: 334. – **D-u**: sedge-herb bog with willows, 16.VII.2009, Krivobokov *23* (UUH). **D-s**: rock outcrops, 17.VII.2014, *3714* Afonina. **D-m**: sedge-aspen forest with *Abies sibirica* and *Bergenia crassifolia*, 22.VIII.2008, with sporophytes, Krivobokov *4* (UUH). **S-u**: rock outcrops on lake shore, niches between stones, with sporophytes, 14.VII.2014, Czernyadjeva *62-14*.

P. schimperi* (Müll. Hal.) A.L. Andrews – **S-u: vertical rock surface, in fissures, as an admixture to *Dicranum elongatum*, 14.VII.2014, Afonina *3014*.

P. wahlenbergii (F. Weber & D. Mohr) A.L. Andrews (*Mniobryum albicans* (Wahlenb.) Limpr.) – Bardunov, 1960: 139; 1961: 87; Ignatov *et al*., 2004: 334. – **S-u**: wet meadow, in pool, 26.IX.1939, Tyulina *s.n.* (LE); moss community along stream under waterfall, 13.VII.2014, Afonina *2914*; lake shore, on stones, 14.VII.2014, Czernyadjeva *61-14*. **S-m**: in mixed forest with *Abies sibirica*, on stones, 13.VII.2014, Afonina *2414*; lake shore, niches between stones, 15.VII.2014, Czernyadjeva *63-14*.

Polytrichastrum alpinum (Hedw.) G.L. Sm. – Tubanova & Krivobokov, 2017: 244. – **D-m**: forb-moss-fir forest with *Pinus sibirica* and *Bergenia crassifolia,* 22.VIII.2008, Krivobokov (UUH). **SO**: goltsy, forb-willow thicket with *Bergenia crassifolia,* 14.VII.2009, Krivobokov *s.n.* (UUH). **S-u**: vertical rocky surface, in fissures, 14.VII.2014, Afonina *3014*; rocky outcrops on lake shore, niches between stones, 14.VII.2014, Czernyadjeva *62-14*. **S-m**: mixed forest with *Abies sibirica*, dry stream bed, 13.VII.2014, Afonina *2514*. **SO**: goltsy, herb-*Bergenia crassifolia*-willow thicket, with sporophytes, 14.07.2009, Krivobokov *7* (UUH).

P. septentrionale (Brid.) E.I. Ivanova, N.E. Bell & Ignatova (*Polytrichum norvegicum* Hedw.) – Bardunov, 1961: 65. – **S-u**: nival community near snow bed, 14.VII.2014, Afonina *3214.* **S-m**: mixed forest with *Abies sibirica*, on stones, as admixture to *Pohlia* sp., 14.VII.2014, Afonina *3614*. Upper

of Talamush River (left tributary of Bol'shaya River), wet surface of rock, 26.VII.1962, Siplivinsky, Lagutskaya *s.n.* (LE).

P. sexangulare (Flörke ex Brid.) G.L. Sm. – Ignatov *et al.*, 2004: 336. – **S-u**: damp rock outcrops near waterfall and moss community under rock outcrops, 14.VII.2014, Afonina *2614, 3114*; lake shore, on soil, 14.VII.2014, Czernyadjeva *61-14*. The mouth of Tarkulik River, lake shore, 2.VIII.1962, Siplivinsky, Lagutskaya *s.n.* (IRK, LE).

Polytrichum commune Hedw. – Bardunov, 1960: 140; 1961: 65; Ignatov et al., 2004: 334. – Common, widespread species, grows in various types of forests, communities of *Pinus pumila*, bogs, on lake shores, in alpine meadows and in mountain tundra. Sporophytes frequent.

P. juniperinum Hedw. – Bardunov, 1960: 140; 1961: 65; Ignatov *et al.*, 2004: 334. – **D-u**: sedge-moss-*Pinus sibirica* forest with *Abies sibirica*, 24.VIII.2008, Krivobokov *7* (UUH); sedge-moss fir forest with *Bergenia crassifolia*, 16.VII.2009, Krivobokov *22* (UUH); fir-forest with *Rhododendron aureum*, 24.VIII.2008, Krivobokov *6* (UUH). **D-l**: pine forest with *Vaccinium vitis-idaea,* 23.VII.2009, Krivobokov *46* (UUH). **S-u**: shore of lake, on outcrops, 14.VII.2014, Czernyadjeva *62-14*.

P. longisetum Sw. ex Brid. (*P. gracile* Sw ex Brid.) – Bardunov, 1961: 64. – Mouth of Kudaldy Creek, swamp, 25.VIII.1959, Siplivinsky *s.n.* (det. Abramova) (LE).

P. piliferum Hedw. – Bardunov, 1960: 141; 1961: 65; Ignatov *et al*., 2004: 334. – **D-u**: *Pinus sibirica*-forest with *Abies sibirica* and *Bergenia crassifolia*, 16.VII.2009, Krivobokov *21* (UUH); alpine meadow with *Rhododendron aureum*, 15.VII.2009, Krivobokov *17* (UUH). **S-u**: rock outcrops on lake shore, on stones, 14.VII.2014, Czernyadjeva *62-14*. **SO**: goltsy, alpine meadow with *Rhododendron aureum* and *Bergenia crassifolia*, 15.VII.2009, Krivobokov *13* (UUH); yernik with *Bergenia crassifolia,* 15.VII.2009, Krivobokov *11* (UUH). With sporophytes.

P. strictum Brid. – Bardunov, 1960: 140; 1961: 65; Ignatov *et al*., 2004: 336. – **S-u**: moss community below rock outcrops, 14.VII.2014, Afonina *3114*.

Pseudobryum cinclidioides (Huebener) T.J. Kop. (*Mnium cinclidioides* Huebener) – Bardunov, 1960: 139; 1961: 91; 1969:189-190; Ignatov *et al*., 2004: 336. – **B-l**: bank of river, near water, 30.VI.1956, Bardunov *s.n.* (IRK). This species is known for the reserve only by collection of Bardunov.

Pseudoleskeella papillosa* (Lindb.) Kindb. – **D-s: on outcrops, among *Lewinskya sordida*, 17.VII.2014, Afonina *3714*. **S-u**: rock outcrops on lake shore, on stones, with *Pseudoleskeella rupestris*, 14.VII.2014, Czernyadjeva *62-14*.

P. nervosa (Brid.) Nyholm (*Leskeella nervosa* (Brid.) Loeske) – Bardunov, 1960: 139; 1961: 100; Ignatov *et al*., 2004: 336. – **D-s**: on outcrops, 17.VII.2014, Afonina *3714*.

P. rupestris* (Berggr.) Hedenäs & Söderstr. **S-u: damp rock outcrops near waterfall, 13.VII.2014, Afonina *2714*; rock outcrops on lake shore, on stones, with *P. papillosa*, 14.VII.2014, Czernyadjeva *62-14*.

Pterigynandrum filiforme Hedw. – Bardunov, 1960: 140; 1961: 111; Ignatov *et al.*, 2004: 338. – **S-u**: vertical rock surface, in fissures, 14.VII.2014, Afonina *3014*. **D-s**: on outcrops, 17.VII.2014, Afonina *3714*; rock outcrops in coniferous forest, on stones, 17.VII.2014, Czernyadjeva *64-14*.

Ptilium crista-castrensis (Hedw.) De Not. – Bardunov, 1961: 114. – Rather common species, more often grows in various forests on soil, in *Pinus pumila* communities also on fallen trees.

Pylaisia polyantha (Hedw.) Bruch, Schimp. & W. Gümbel – Bardunov, 1961: 113. – Widespread and common species, often occurs in forests, grows mainly on tree trunks, also on rocks and stony substrates.

Racomitrium lanuginosum (Hedw.) Brid. – Bardunov, 1960: 140; Ignatov *et al.*, 2004: 340. – **S-u**: rock-field, 14.VII.2014, Afonina *3014*; on dry rocks and boulders, 14.VII.2014, Afonina *3614*; rock outcrops on lake shore, on stones, 14.VII.2014, Czernyadjeva *62-14*.

Rhabdoweisia crispata (Dicks. ex With.) Lindb. (*R. kusenevae* Broth.) – Bardunov, 1958:119; 1969: 140; 1961: 68-69; Ignatov *et al.*, 2004: 340. – **D-s**: rock outcrops in coniferous forest, niches between stones, with sporophytes, 17.VII.2014, Czernyadjeva *64-14*.

**Rhizomnium andrewsianum* (Steere) T.J. Kop. – Upper course of Talamush River (left tributary of Bol'shaya River), wet surface of rock, 26.VII.1962, Siplivinsky, Lagutskaya *s.n.* (LE). This species is included into Red data book of the Republic of Buryatia (Abasheev *et al.*, 2013).

R. magnifolium* (Horik.) T.J. Kop. – **S-u: swampy alpine meadow, 26.IX.1939, Tyulina *s.n.* (LE); swampy fir-birch forest along river bank, 19.IX.1939, Tyulina *s.n.* (LE); moss community along stream below waterfall, 13.VII.2014, Afonina *2914*. **S-m**: Nizhnee lake, boggy forest, 13.VII.2014, Afonina *4014*.

R. pseudopunctatum (Bruch, Schimp. & W. Gümbel) T.J. Kop. (*Mnium pseudopunctatum* Bruch, Schimp. & W. Gümbel) – Bardunov, 1960: 139; 1961: 91; Ignatov *et al.*, 2004: 340. – **D-u**: sedge-moss bog, 12.VII.2009, Krivobokov *1* (UUH); forb birch forest, 13.VII.2009, Krivobokov *4* (UUH); subalpine tall-herb meadow, 12.VII.2009, Krivobokov *2* (UUH). **S-u**: rocky bed of stream, with *Pohlia drummondii, P. crudoides, Bryum* sp., 14.VII.2014, Afonina *3314*; rock outcrops near waterfall, niches between stones near water, 13.VII.2014, Czernyadjeva *58-14*; lake shore, on soil, 14.VII.2014, Czernyadjeva *61-14*.

R. punctatum (Hedw.) T.J. Kop. (*Mnium punctatum* Hedw.) – Bardunov, 1960: 139; 1961: 91; Ignatov *et al.*, 2004: 340. – **B-m**: stream bed in fir forest with *Abies sibirica*, 3.VII.1956, Bardunov *s.n.* (IRK, LE).

Rhodobryum ontariense* (Kindb.) Paris – **B-m: hot springs, dark coniferous forest, as small admixture to *Plagiomnium ellipticum*, 18-19.VIII.1959, Siplivinsky *s.n.* (LE).

Rhynchostegium riparioides (Hedw.) Cardot (*Platyhypnidium riparioides* (Hedw.) Dixon) – Bardunov, 1961: 110. – **N**ear mouth of Kerma River, on stones in water, 7.IX.1956, Bardunov *s.n.* (IRK).

Rhytidiadelphus triquetrus (Hedw.) Warnst. – Bardunov, 1960: 140; 1961: 115; Ignatov *et al.*, 2004: 342. – Rather common species, grows in various types of forests, more common as an admixture in moss cover; in goltsy belt occurs in *Duschekia fruticosa* thickets and *Pinus pumila* communities.

Rhytidium rugosum (Hedw.) Kindb. – Bardunov, 1960: 140; 1961: 115; Ignatov *et al.*, 2004: 340. – Common species, grows on soil, stones, rock outcrops in various types of forests, mostly dry and light; in goltsy on rock-fields, in tundra, in *Pinus pumila* communities; often forms large cushions.

Saelania glaucescens (Hedw.) Broth. – Bardunov, 1961: 66. – **S-u**: rock outcrops on lake shore, in niches between stones, with sporophytes, 14.VII.2014, Czernyadjeva *62-14*.

Sanionia uncinata (Hedw.) Loeske (*Drepanocladus uncinatus* (Hedw.) Warnst.) – Bardunov, 1960: 139; 1961: 106; Ignatov *et al.*, 2004: 340. – Widespread species with wide ecological

amplitude; occurs in various habitats; grows in forests on soil, tree trunks, rotting wood, stones; also grows in bush thickets, bogs, meadows, on rock-fields and rock outcrops.

Schistidium papillosum Culm. – Ignatov *et al*., 2004: 344. – **D-s**: rock outcrops in coniferous forest, on stones, with sporophytes, 17.VII.2014, Czernyadjeva *64-14*.

S. platyphyllum (Mitt.) Perss. (*S. alpicola* auct. non (Hedw.) Limpr.) – Bardunov, 1961: 83. – **S-u**: rock outcrops near waterfall, on stones, with sporophytes, 13.VII.2014, Czernyadjeva *58-14*; lake shore, on stones, with sporophytes, 14.VII.2014, Czernyadjeva *61-14*.

S. pulchrum* (Lindb. ex Braithw.) Warnst. – **S-u: rock-field, as an admixture to *Brachythecium cirrosum*, 14.VII.2014, Afonina *3014*.

S. rivulare (Brid.) Podp. – Ignatov *et al*., 2004: 344. – **S-m**: in mixed forest with *Abies sibirica*, on stones, 13.VII.2014, Afonina *2414*. **S-l**: Valukan cape, on coastal boulders, with sporophytes, 7.VII.1956, Bardunov *s.n.* (LE).

* *Sciuro-hypnum curtum* (Lindb.) Ignatov – **D-m**: fir forest with *Bergenia crassifolia* and *Calamagrostis* sp., 25.VIII.2008, Krivobokov *12* (UUH), det. Ignatov.

S. latifolium* (Kindb.) Ignatov & Huttunen – **D-s: on outcrops, 17.VII.2014, Afonina *3717* (LE).

S. plumosum* (Hedw.) Ignatov & Huttunen – **S-u: damp rock outcrops near waterfall, with sporophytes, 13.VII.2014, Afonina *2614*; same place, Czernyadjeva *58-14*; nival location, in niches between stones, with sporophytes, 13.VII.2014, Czernyadjeva *60-14*.

S. populeum (Hedw.) Ignatov & Huttunen (*Brachythecium populeum* (Hedw.) Bruch, Schimp. & W. Gümbel) – Bardunov, 1961: 108. – Recorded by Bardunov from the middle course of Bol'shaya River; in our collections it is absent.

S. reflexum (Starke) Ignatov & Huttunen (*Brachythecium reflexum* (Starke) Bruch, Schimp. & W. Gümbel – Bardunov, 1961: 108; Ignatov *et al.*, 2004: 346. – **D-u**: fir forest with *Bergenia crassifolia,* 25.VIII.2008, Krivobokov *10* (UUH). **D-l**: reedgrass meadow, with sporophytes, 17.VII.2009, Krivobokov *26* (UUH). **S-u**: vertical rock surface, in fissures, 14.VII.2014, Afonina *3114*; lake shore, niches between stones, 14.VII.2014, Czernyadjeva *61-14*. **S-m**: mixed forest with *Abies sibirica*, on stones, 13.VII.2014, Afonina *2414*.

S. starkei* (Brid.) Ignatov & Huttunen (*Brachythecium starkei* (Brid.) Bruch, Schimp. & W. Gümbel – **D-u: fir forest with *Bergenia crassifolia,* 16.VII.2009, Krivobokov *22* (UUH); **S-m**: lake shore, niches between stones, 15.VII.2014, Czernyadjeva *63-14*. **SO**: goltsy, herb-willow thicket with *Bergenia crassifolia,* 14.VII.2009, Krivobokov *7* (UUH). Two specimens collected by Tyulina and identified by Lazarenko as *Brachythecium starkei* are stored in LE; however, later these specimens were reidentified by Ignatov as *Sciuro-hypnum reflexum*. Is it possible that the records of *S. starkei* for the reserve (Bardunov, 1961; Ignatov *et al.,* 2004) ware based on these specimens.

Scorpidium revolvens (Sw. ex anon.) Rubers (*Limprichtia revolvens* (Sw. ex anon.) Loeske, *Drepanocladus revolvens* (Sw. ex anon.) Warnst.) – Tubanova & Krivobokov, 2017: 244. – **D-u**: sedge-forb-moss bog, 12.VII.2009, Krivobokov *1* (UUH).

Sphagnum angustifolium (Russow) C.E.O. Jensen – Bardunov, 1961: 62. – **D-l**: larch forest, 20.VII.2009, Krivobokov *41* (UUH); *Pinus sibrica*-forest with *Larix dahurica*, 23.VII.2009, Krivobokov *50* (UUH).

S. aongstroemii C. Hartm. – Bardunov, 1960: 140; 1961: 61; Ignatov *et al.*, 2004: 348; Abasheev *et al*., 2013: 444. – **D-l**: *Pinus sibirica*-forest with *Larix dahurica*, 23.VII.2009, Krivobokov *50* (UUH). **S-u**: south-faced rock outcrops near shore of lake, 14.VII.2014, Afonina *3414*. Mouth of Tarkulik River, lake shore, 2.VIII.1962, Siplivinsky, Lagutskaya *s.n.* (IRK, LE). In the Red data book of the Republic of Buryatia (Abasheev *et al.*, 2013) this species is recorded for Shumilikha and Bol'shaya Rivers.

S. capillifolium (Ehrh.) Hedw. (*S. acutifolium* Schrad.) – Bardunov, 1961: 63. – **D-u**: swamp tall herb-birch forest, 23.VII.2008, Krivobokov *5* (UUH). **S-u**: moss community below rock outcrops, 14.VII.2014, Afonina *3114*; lake shore, 14.VII.2014, Czernyadjeva *61-14*.

S. compactum DC. – Bardunov, 1960: 140; 1961: 61; Ignatov *et al*., 2004: 348. – **S-u**: on dry rocks and boulders, 14.VII.2014, Afonina*, 3514*; lake shore, 14.VII.2014, Czernyadjeva *61-14*. **S-l**: shore of Baikal, thickets of *Pinus pumila*, 31.V.1938, Tyulina, *5* (LE); mouth of Tarkulik River, *Pinus sibirica*-larch forest, 15.IX.1956, Tyulina, Skryabina, *s.n.* (LE).

S. fuscum (Schimp.) Klinggr. – Bardunov, 1960: 140; 1961: 62; Ignatov *et al.*, 2004: 348. – **D-m**: peat moss bog with *Larix dahurica*, 26.VIII.2008, Krivobokov *13* (UUH). **D-l**: peat moss bog, 26.VII.1959, Sergievskaya, Siplivinsky *s.n.* (LE). Near Sosnovka Settlement, peat moss bog on shore of Baikal Lake, 14.VII.1940, Tyulina *168* (LE).

S. girgensohnii Russow – Bardunov, 1960: 141; Ignatov *et al.*, 2004: 348. – **D-m**: *Pinus sibirica*-forest with *Bergenia crassifolia,* with sporophytes, 25.VIII.2008, Krivobokov, *11* (UUH). **D-l**: herb-moss-*Pinus sibirica*-forest, 26.VIII.2008, Krivobokov, *15* (UUH); *Pinus sibirica*-forest with *Ledum palustre*, 23.VII.2009, Krivobokov, *48* (UUH); sedge-larch forest with *Betula divaricata*, 20.VII.2009, Krivobokov, *41* (UUH). Upper course of Bezymyanny Klyuch, between Talamushem and Malaya Rivers, east slope of rock, VIII.1959, Siplivinsky *s.n.* (Herbarium of Barguzin Reserve). **S-u**: rock outcrops on lake shore, near water, 14.VII.2014, Czernyadjeva *62-14*.

S. riparium Ĺngstr. – Bardunov, 1961: 62. – This species is recorded by Bardunov from the mouth of Bol'shaya River; in our collections it is absent.

S. rubellum Wils. – Tubanova & Krivobokov, 2017: 245. – **D-l**: sedge-forbs-moss bog with *Betula rotundifolia*, 24.VII.2009, Krivobokov *52* (UUH).

S. russowii Warnst. – Bardunov, 1960: 141; 1961: 62; Ignatov *et al.*, 2004: 350. – Upper course of Talamush River (left tributary of Bol'shaya River), wet surface of rock, 26.VII.1962, *s.n.* Siplivinsky, Lagutskaya (LE). Pass from Tukulik River, tundra, 1.VIII.1962, Siplivinsky, Lagutskaya *s.n.* (Herbarium of Barguzin Reserve).

S. teres (Schimp.) Ångstr. – Bardunov, 1960: 141; Ignatov *et al.*, 2004: 350. – **D-m**: sedge-sphagnum bog with *Betula* sp., 18.VII.2009, Krivobokov *35* (UUH). **S-u**: sedge spring fen, 27.IX.1939, Tyulina, *31* (LE).

S. warnstorfii Russow – Bardunov, 1960: 141; 1961: 62. – **D-s**: rock outcrops in coniferous forest, niches between stones, 17.VII.2014, Czernyadjeva, *64-14*. **S-u**: lake shore, 14.VII.2014, Czernyadjeva *61-14*.

S. wulfianum* Girg. – **S-u: near Tret'e lake, alpine belt, grass-moss meadow community on lake shore, 14.VII.2014, Mamontov *s.n.* (LE).

Splachnum ampullaceum Hedw. – Bardunov, 1961: 85. – This species is recorded by Bardunov from vicinity of Sosnovka Settlement; in our collections it is absent.

S. luteum Hedw. – Bardunov, 1961: 85. – Between mouths of Bol'shaya and Davsha Rivers, larch forest, with sporophytes, with *S. rubrum* and *S. sphaericum*, 17.VIII.1959 Siplivinsky *s.n.* (det. Abramova) (LE).

**S. rubrum* Hedw. – Between mouths of Bol'shaya and Davsha Rivers, larch forest, with sporophytes, with *S. sphaericum, S. luteum*, 17.VIII.1959, Siplivinsky *s.n.* (det. Abramova) (LE);

S. sphaericum Hedw. (*S. ovatum* Hedw.) – Tubanova & Krivobokov, 2017: 245. – Between mouths of Bol'shaya and Davsha Rivers, larch forest, with sporophytes, with *S. rubrum* and *S. luteum*, 17.VIII.1959, Siplivinsky *s.n.* (det. Abramova) (LE). **D-u**: *Pinus pumila* and *Rhododendron aureum* community, on soil, 15.VII.2009, Krivobokov *s.n.* (UUH).

Stereodon fauriei* (Cardot) Ignatov & Ignatova – **B-m: hot springs, aspen forest with *Abies sibirica*, on fallen aspen trunks, with sporophytes, 2.VII.1956, Bardunov *s.n.* (IRK, LE).

S. plicatulus Lindb. – Tubanova & Krivobokov, 2017: 245. – **D-s**: on outcrops, 17.VII.2014, Afonina *3714*; rocky outcrops in coniferous forest, on stones, 17.VII.2014, Czernyadjeva *64-14*. **D-m**: fir forest with *Bergenia crassifolia*, 25.VIII.2008, Krivobokov *10* (UUH). **SO**: goltsy, forb-willow thicket with *Bergenia crassifolia,* 14.VII.2009, Krivobokov *10* (UUH). **S-u**: dry rocky outcrops near waterfall, 13.VII.2014, Afonina *2714*; south-faced rock outcrops near lake shore, 14.VII.2014, Afonina *3414*, in same place, Czernyadjeva *62-14*. **S-m**: lake shore, on stones, 15.VII.2014, Czernyadjeva *63-14*.

**S. revolutus* Mitt. – Source of Sosnovka River, slope of ridge, rocky field, 17.VIII.1940, Tyulina *s.n.* (LE).

S. subimponens* (Lesq.) Broth. – **S-u: damp rock outcrops near waterfall, 13.VII.2014, Afonina *2714*.

Straminergon stramineum* (Dicks. & Brid.) Hedenäs – **D-u: sedge-herb-moss fen, 12.VII.2009, Krivobokov *1* (UUH). **S-u**: sedge spring fen, as an admixture to *Sphagnum teres*, 27.IX.1939, Tyulina *31* (LE); rocky stream bed, 14.VII.2014, Afonina *3314*.

Syntrichia norvegica* F. Weber – **S-u*:* lake shore, on soil, with sporophytes, 14.VII.2014, Czernyadjeva *61-14*. This species was erroneously recorded for the reserve by Ignatov *et al.* (2004) based on data of Bardunov (1961) from the areas outside the reserve.

S. ruralis (Hedw.) F. Weber & D. Mohr (*Tortula ruralis* (Hedw.) P. Gaertn., B. Mey. & Scherb.) – Bardunov, 1960: 141; Ignatov *et al*., 2004: 340. – **D-u**: herb subalpine meadow, 16.VII.2009, Krivobokov *20* (UUH). **D-s**: grass-forb meadow, 18.VII.2014, Afonina *s.n*.

Tayloria sp. – **S-u**: near Pervoe lake, *Pinus pumila-Bergenia crassifolia* community on rocks, in hollow, in moist rock niche, 14.VII.2014, Mamontov *YuSM-443-3-2* (LE). Unfortunately, it was possible to identify this specimen only for genus level, since it contained plants only with setae, while capsules were absent. The setae are thick, and, taking this into account, it is possible to assume that it is either *Tayloria hornschuchii* or *T. froelichiana*.

Tetrodontium repandum* (Funck) Schwägr. – **S-u: nival location, niches between stones, with sporophytes, 13.VII.2014, Czernyadjeva *60-14* (LE).

Tetraphis pellucida* Hedw. – **D-s: rock outcrops in coniferous forest, niches between stones, 17.VII.2014, Czernyadjeva *64-14*.

Tetraplodon angustatus (Hedw.) Bruch, Schimp. & W. Gümbel – Bardunov, 1961: 84. – **B-l**: poplar forest with *Chosenia arbutifolia*, on dead trunk of *Chosenia arbutifolia*, with sporophytes, 9.IX.1956, Bardunov *s.n.* (IRK).

T. mnioides (Hedw.) Bruch, Schimp. & W. Gümbel – Bardunov, 1961: 84-85. – **B-m**: hot springs, poplar-fir forest, on log, with sporophytes, as an admixture to *Ceratodon purpureus*, 12.IX.1956, Bardunov *s.n.* (IRK).

Thamnobryum neckeroides* (Hook.) E. Lawton – **S-u: rock outcrops near waterfall, crevices between stones, 13.VII.2014, Czernyadjeva *58-14*. **S-m**: mixed forest with *Abies sibirica*, dry stream bed, 13.VII.2014, Afonina *2514*.

Thuidium assimile (Mitt.) A. Jaeger (*T. philibertii* Limpr.) – Bardunov, 1961: 101. – **B-m**: vicinity of hot springs, *Pinus sibirica*–fir forest, in low part of birch trunk, 2.VIII.1956, Bardunov, Kaplin *s.n.* (LE). **S-l**: fir forest with *Pinus sibirica* and *Bergenia crassifolia*, 22.VIII.2008, Krivobokov *4* (UUH) (as small admixture).

Timmia austriaca* Hedw. – **S-u: near Pervoe lake, *Pinus pumila-Bergenia crassifolia* community on rocks, in moist rock niche, 14.VII.2014, Mamontov *YuSM-443-3-2* (LE).

T. bavarica Hessl. – Bardunov, 1960: 141; 1961: 94; Ignatov *et al.*, 2004: 356. – This species is absent in our collections; Bardunov and Kirpichev collected it in the middle course of Bol'shaya River.

Tomentypnum nitens (Hedw.) Loeske – Bardunov, 1960: 141; 1961: 107; Ignatov *et al.*, 2004: 356. – Valley of Davsha River, dwarf-shrub bog, 16.VI.1943, Tyulina *883*. (LE). **D-m**: sedge-pit moss fen, 18.VII.2009, Krivobokov *35* (UUH). **D-l**: sedge-moss fen with *Betula* sp., 24.VII.2009, Krivobokov *51*, *52, 53* (UUH).

Tortella fragilis* (Hook. & Wils.) Limpr. – **S-u: near Pervoe lake, *Pinus pumila-Bergenia crassifolia* community on rocks, in moist rock niche, 14.VII.2014, Mamontov, *YuSM-443-3-2* (LE).

Tortula hoppeana* (Schultz) Ochyra – **S-u: lake shore, on soil and niches between stones, 14.VII.2014, Czernyadjeva *61-14, 62-14*.

T. mucronifolia Schwägr. (*Syntrichia mucronifolia* Brid.) – Bardunov, 1960: 141; 1961: 80; Ignatov *et al.*, 2004: 340. – **B-u**: on rocky outcrops, 3.VII.1956, Bardunov *s.n.* (IRK).

Ulota curvifolia (Wahlenb.) Brid. – Bardunov, 1961: 95–96. – **D-s**: rock outcrops in coniferous forest, niches between stones, with sporophytes, 17.VII.2014, Czernyadjeva *64-14*. **S-u**: vertical rock surface, 14.VII.2014, Afonina *3014*; rock outcrops on lake shore, on stones, with sporophytes, 14.VII.2014, Czernyadjeva *62-14*.

Warnstorfia exannulata (Bruch, Schimp. & W. Gümbel) Loeske (*Drepanocladus exannulatus* (Bruch, Schimp. & W. Gümbel) Warnst.) – Bardunov, 1960: 139; 1961: 105-106; Ignatov *et al.*, 2004: 360. – **D-u**: sedge-herb-moss fen, 12.VII.2009, Krivobokov *1* (UUH). **D-l**: *Pinus sibirica* forest with *Larix dahurica*, 23.VII.2009, Krivobokov *50* (UUH). **S-u**: south-faced rock outcrops near lake shore, 14.VII.2014, Afonina *3414*; lake shore, in water, 14.VII.2014, Czernyadjeva *61-14*.

W. fluitans (Hedw.) Loeske (*Drepanocladus fluitans* (Hedw.) Warnst.) – Bardunov, 1961: 105. – **B-l**: peat moss bog with *Larix dahurica* and *Betula* sp., 6.VIII.1956, Bardunov *s.n.* (IRK).

W. sarmentosa (Wahlenb.) Hedenäs (*Calliergon sarmentosum* (Wahlenb.) Kindb.) – Bardunov, 1960: 138; 1961: 104; Ignatov *et al.*, 2004: 360. – **SO**: system of Malyi Klyuch, alpine meadow, 25.VII.1959, Siplivinsky *s.n.* (LE). **S-u**: alpine meadow, stream bed, 14.VII.2014, Afonina 3*514*; lake shore,

in water, 14.VII.2014, Czernyadjeva *61-14*.

W. trichophylla* (Warnst.) Tuom. & T.J. Kop. – **S-u: on dry boulders, 14.VII.2014, Afonina *3514*; lake shore, in water, 14.VII.2014, Czernyadjeva *61-14*.

EXCLUDED TAXA

Bucklandiella heterosticha (Hedw.) Bedn.-Ochyra & Ochyra (*Racomitrium heterostichum* (Hedw.) Brid.) – This species was erroneously recorded for the reserve (Bardunov, 1960, 1961). According to recent studies, this species occurs in Russia in the north-west of the European part (Ignatova, 2017), and apparently, all references on the findings of this species in the reserve belong to *B. sudetica*.

Callicladium haldanianum (Grev.) H.A. Crum (*Heterophyllum haldanianum* (Grev.) Kindb.) – Voucher specimen of this species from the reserve cited in publications (Bardunov, 1961; Ignatov *et al.*, 2004) was reidentified as *Hypnum cupressiforme*.

Campylophyllum hallerii (Sw. ex Hedw.) M. Fleish. – This species was reported by Bardunov (1960, 1969) for north-east coast of Baikal Lake, the upper course of Tompuda River, which is outside the territory of reserve, and probably the record of Ignatov *et al*. (2004) was based on these data.

Dicranoweisia cirrata (Hedw.) Lindb. – We did not find the specimen of this species collected by Bardunov and rather, the record of this species for the reserve (Bardunov, 1961) is erroneous. *Dicranoweisia cirrata* occurs in Russia only in the Caucasus at the Black Sea coastal area (Ignatov *et al.*, 2006).

Lewinskya speciosa (Nees) F. Lara, Garilleti & Goffinet (*Orthotrichum speciosum* Nees) – The record for the reserve of Bardunov (1961) from Bol'shaya River was based on the specimen reidentified later as *Lewinskya elegans*.

Plagiotheciella pilifera (Swartz) Fleisch. – The specimen of this species from the reserve is absent in LE and IRK, so the record of Bardunov (1961) should be considered erroneous. According to G.Ya. Doroshina (2002), this species occurs in Russia only in Karelia; later it was also found by L.E Kurbatova in Leningrad Province (Ignatov & Ignatova, 2004).

Psilopilum laevigatum (Wahlenb.) Lindb. – This species was recorded for the reserve by Bardunov (1961) and Ignatov *et al*. (2004); however, the specimen in LE was later reidentified by E.I. Ivanova as *Oligotrichum falcatum* Steere.

Sciuro-hypnum oedipodium (Mitt.) Ignatov & Huttunen – This species was reported for the reserve by Tubanova & Krivobokov (2017); however, the specimen was later reidentified by M.S. Ignatov as *S. curtum.*

Tetrodontium brownianum (Dicks.) Schwägr. – This species was erroneously recorded for the reserve by Bardunov (1960), Ignatov *et al*. (2004) and Abasheev *et al.* (2013). These records should be referred to *T. repandum*.

DISCUSSION

The list of mosses of the Barguzin Reserve includes 257 species. It is comparable to the floras of other East Siberian nature reserves from where bryological data are available. For example, for Vitim Reserve 208 species have been registered (Bardunov, 2005), for Sokhondinsky Reserve – 276 (Afonina *et. al.*, 2012), for Olekminsky Reserve – 207 (Krivoshapkin, 1998), for Dzherginsky Reserve – 286 (Tubanova, unpublished data)

In general, the moss flora of the Barguzin Reserve is typical for the mountainous areas of southern Siberia. However, its peculiar feature is an almost complete absence of calciphilous species. According to I.D. Chersky (1888) (see Tyulina, 1949), rocks of syenite granite are predominant within the reserve territory, while limestone outcrops occur only in Sosnovka River basin. Unfortunately, mosses were not collected in the valley of Sosnovka River so far, and we suspect that there is some gap in the revealed species composition of the total moss flora. At the same time, high representation and high coenotic role of acidophilic species have to be noted. For example, such species as *Bucklandiella sudetica* and *B. microcarpa*, being frequently confined to acidic rocks, are abundant on stone surfaces, large boulders and rock outcrops. Species of the genus *Lescuraea* are also numerous within the area, being abundant on rocky substrates. Species of *Grimmia* play also a significant role in rocky habitats. Such acidophilic species as *G. alpestris*, *G. elatior, G. mollis, G. muehlebeckii*, and *G. torquata* should be mentioned. Some specificity of the flora is determined by the arctic-montane species, predominantly distributed in the Arctic regions. Within the reserve, these species are rare and grow mainly in the high mountain areas. Namely, *Arctoa fulvella, Aulacomnium turgidum, Kiaeria glacialis, Oligotrichum falcatum, Polytrichastrum septentrionale, Racomitrium lanuginosum, Rhizomnium andrewsianum, Sphagnum aongstroemii, Tomentypnum nitens,* etc. are the representatives of this group. Somewhat mysterious is the lack of species of the genus *Flexitrichum* (*F. flexicaule* (Schwäegr.) Ignatov & Fedosov and *F. gracile* (Mitt.) Ignatov & Fedosov). It is difficult to assume if they were overlooked in the course of collecting or really absent in the reserve due to some unfavourable environmental features of the study area. Presence of East Asian species in the flora also emphasizes its specificity. The examples are as follow: *Anomobryum nitidum,* known from scattered localities in Russia, *i.e.* in southern Siberia, Kamchatka, Amur and Primorye regions (Czernyadjeva *et al.*, 2015); *Bucklandiella nitidula,* known in Buryatia, Transbaikalia, Kamchatka and the Kuril Islands of Russia (Ignatova, 2017); *Myuroclada maximowiczii* and *Stereodon fauriei*, rare in the reserve, but quite common in the south of the Far East and known from few localities in southern Siberia (Afonina & Ignatova, 2007).

It is also worth to mention finding of *Tetrodontium repandum* in the reserve; this is a rare species, known in Russia from Kola Peninsula, Bol'shezemel'skaya tundra, Anabar Plateau, South Siberia (Khakassia and the eastern coast of Baikal Lake), Kamchatka Peninsula, and the south of Russian Far East (Ignatov & Ignatova, 2017).

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