

ON THE DISTRIBUTION OF PROPAGULIFEROUS SPECIES OF
POHLIA (BRYACEAE, MUSCI) IN RUSSIA
О РАСПРОСТРАНЕНИИ ВИДОВ ПОHLIA (BRYACEAE, MUSCI) С
ВЫВОДКОВЫМИ ПОЧКАМИ В РОССИИ

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Abstract

Nine species of propaguliferous *Pohlia* is founded in Russia and adjacent regions: *Pohlia andalusica*, *P. andrewsii*, *P. annotina*, *P. beringiensis*, *P. bulbifera*, *P. camptotrachela*, *P. drummondii*, *P. filum*, *P. proliger*. Their distribution in this regions and habitat preferences are discussed and maps for each species are provided.

Резюме

В России и на близлежащих территориях встречаются 9 видов рода *Pohlia* с выводковыми почками: *Pohlia andalusica*, *P. andrewsii*, *P. annotina*, *P. beringiensis*, *P. bulbifera*, *P. camptotrachela*, *P. drummondii*, *P. filum*, *P. proliger*. Приведены особенности их местообитаний и распространения, а также для всех видов даны карты.

The genus *Pohlia* (Bryaceae) includes ca. 110 species distributed all over the world but predominantly in the temperate and northern latitudes. Twenty-eight species are recognized for Russia at present. Among them there is a group of nine dioicous species in the section *Pohliella* producing propagula in the leaf axils of sterile gametophyte. Species of this group are very alike in general habit, leaves and laminal cells shape and size, exostome and endostome morphology, etc. This notable uniformity probably indicates close phylogenetic relationships and monophyletic origin. The species are distinguished mainly by differences in size, shape, number of propagulae and degree of their differentiation.

During the recent years the taxonomy of propaguliferous species of *Pohlia* has undergone the essential changes (Arts, 1990; Lewis & Smith, 1978; Shaw, 1981a,b, 1982; Wilczek, Demaret, 1970). Thus the necessity of a revision of material collected in Russia has arisen. The author has studied herbarium specimens from KPABG, KRAS, KWHA, LE, LW, LWS, MHA, MSK, SASY, SYKO, VLA. The result of taxonomic study was published by the author earlier (Czernyadjeva, 1997). The purpose of this paper is to map species distribution in Russia and adjacent regions.

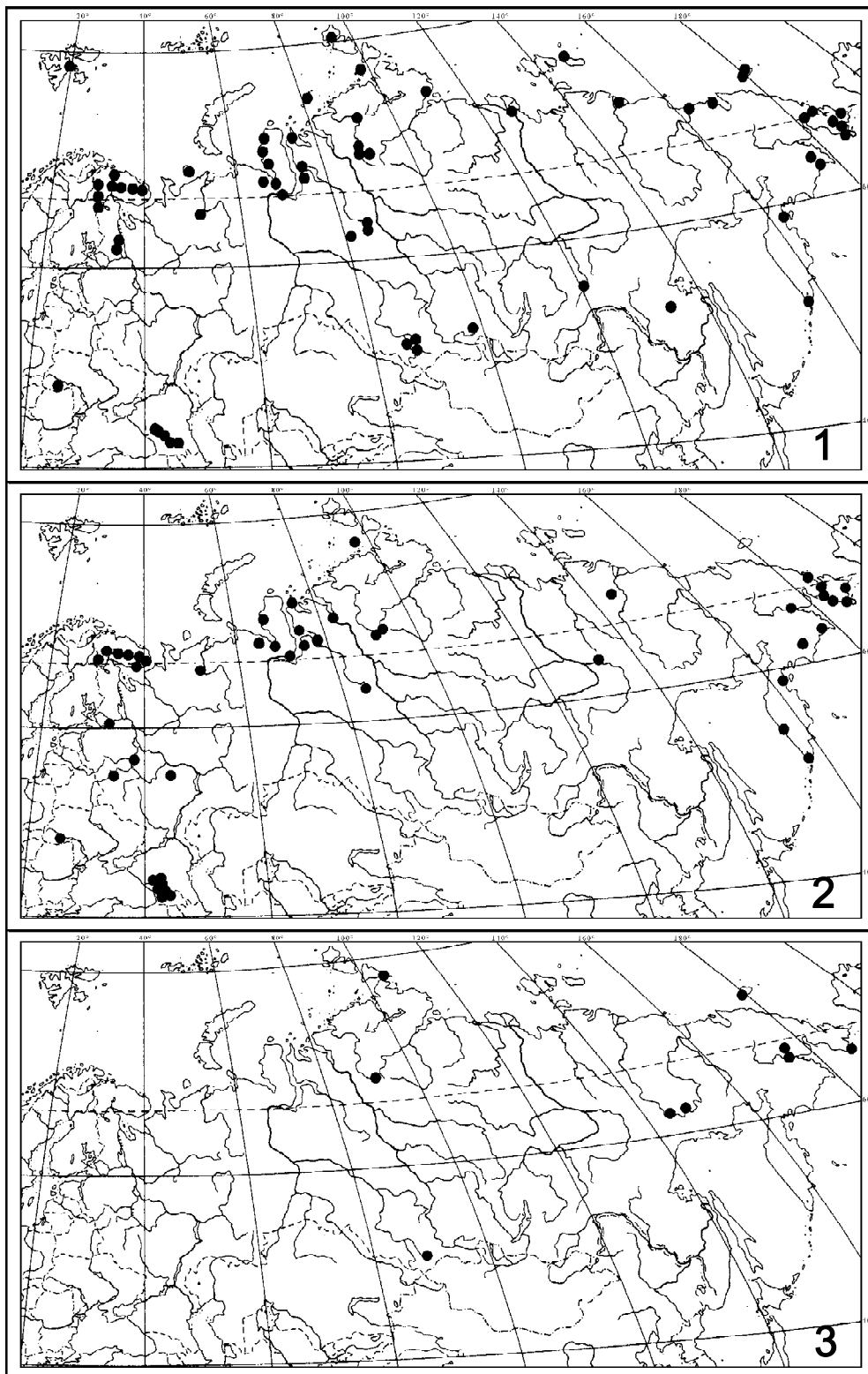
Maps are based only on specimens examined. Habitats data are from label and personal field experience of the author.

Pohlia drummondii (C. Müll.) A.L. Andrews (Fig. 1)

Habitat: usually on moist soil of banks of rivers and streams, among tundra vegetation; less commonly on bare soil of bluffs, landslides, roadbanks, on fine-grained ground of stone fields and rock crevices; rarely among meadow vegetation, willow stands, on decayed woods in forest. It grows as scattered plants or forms small loose mats often intermixed with other mosses: *Dicranella subulata* (Hedw.) Schimp., *Pohlia filum*, *P. proliger*, etc. Sporophytes were collected in the Yamal Peninsula, Chukotka and the Kola Peninsula.

Distribution: *Pohlia drummondii* occurs in the Arctic, Subarctic and northern part of the Boreal zones in Russia. There are some localities in mountain regions as well: in the Carpathians, the Caucasus, the Altai, the Eastern Sayan Mts., in South Yakutia, Khabarovsk Territory, Kamchatka. This is a boreal species also distributed in northern, western and central Europe, Turkey, central Asia, China, North and southern South America, Greenland.

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Figs. 1-3. Distribution of *Pohlia drummondii* (C. Müll.) A.L. Andrews (1), *P. filum* (Schimp.) Mårt. (2) and *P. beringiensis* Shaw (3) in Russia and adjacent regions.

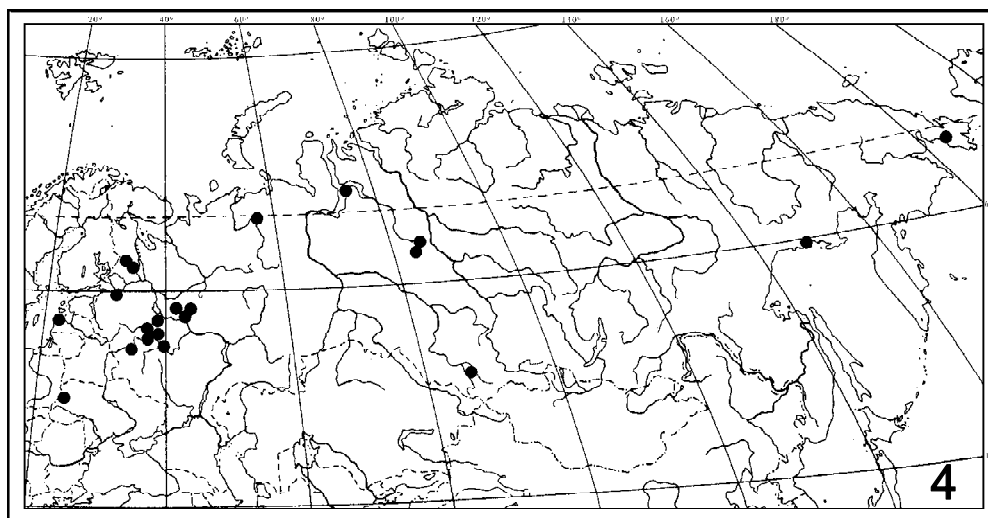


Fig. 4. Distribution of *Pohlia andalusica* (Hoehnel) Broth. in Russia and adjacent regions.

Pohlia filum (Schimp.) Mårt. (Fig. 2)

Habitat: usually on bare sandy soil of river and stream banks, landslides, roadbanks; less commonly on fine on fine-grained ground in rock crevices and among boulders; seldom among tundra and meadow vegetation, in willow stands. It is found as scattered plants, usually intermixed with other mosses: *Dicranella crispera* (Hedw.) Schimp., *Pohlia drummondii*, *P. proliger*, *Psilopilum laevigatum* (Wahlenb.) Lindb. etc. Sporophytes are unknown in Russia.

Distribution: *Pohlia filum* occurs in the Kola Peninsula, on north of West Siberia, centre of European part of Russia, the Caucasus and the northern Far East (Chukotka, Koryakia, Kamchatka). There are a few localities in Leningrad region, Archangel region, the Carpathians, the Taymyr Peninsula, Yakutia. This is a boreal species also known from northern, western, central and southern Europe, central and eastern Asia, North and Central America, Greenland.

Pohlia beringiensis Shaw (Fig. 3)

Habitat: on fine-grained substrata in rock fields and fine earth in tundra. It forms dense mats or grows as separate plants intermixed with other mosses: *Bartramia ithyphylla* Brid., *Ceratodon purpureus* (Hedw.) Brid., *Encalypta* spp., *Pogonatum urnigerum* (Hedw.) P. Beauv., *Psilopilum laevigatum*, *Racomitrium canescens* (Hedw.) Brid. Sporophytes are unknown.

Distribution: *Pohlia beringiensis* is reported only from 9 localities from Asian part of

Russia: the Plateau Putorana (East Siberia), the Altai, Severnaya Zemlya Archipelago, Vrangeli Island, Chukotka, Magadan region. This is an arctic-alpine species also known from North America (Alaska and Yukon Territory).

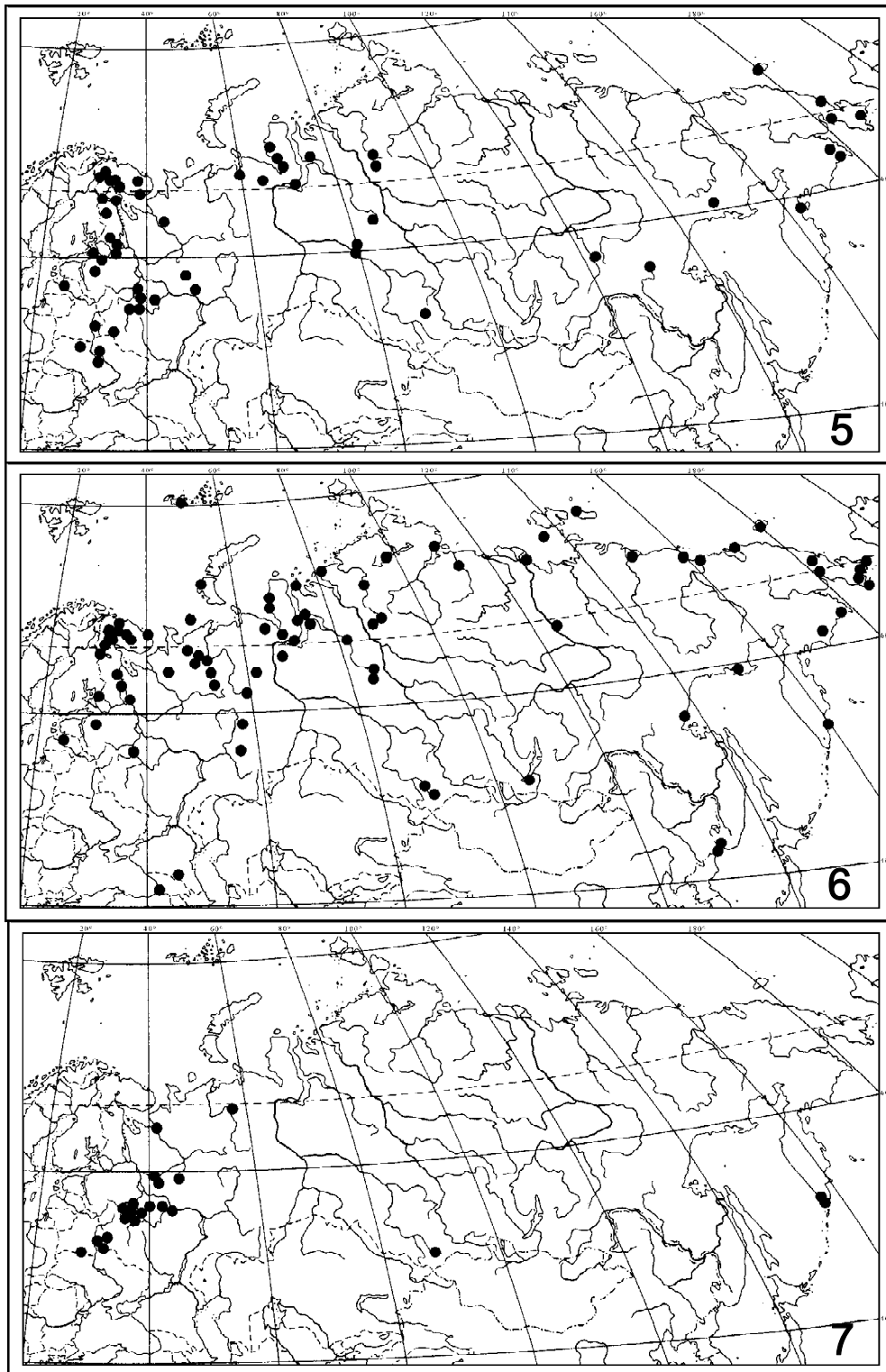
Pohlia andalusica (Hoehnel) Broth. (Fig. 4).

Habitat: usually on bare sandy soil in forests, on river banks, roadbanks, bluffs, sand-quarries; rarely among tundra vegetation and on decayed wood in forests. It is found as scattered plants, seldom as loose mats, often mixed with other mosses: *Ceratodon purpureus*, *Leptobryum pyriforme* (Hedw.) Wils., *Pohlia proliger*, *Sanionia uncinata* (Hedw.) Loeske etc. Sporophytes are unknown in Russia.

Distribution: *Pohlia andalusica* occurs in the centre of European part of Russia (Leningrad, Moscow and Vladimir Provinces). There are a few localities in Estonia, Archangelsk Province, the Carpathians, in north of West Siberia, the Altai, Chukotka and Magadan region. This is a boreal species also known from northern, western, central and southern Europe, Azores, North America, Greenland.

Pohlia bulbifera (Warnst.) Warnst. (Fig. 5)

Habitat: usually on bare soil beside rivers and lakes, on bluffs, landslides, roadbanks; less frequently among tundra vegetation, on exposed roots and fallen trunks in forests; seldom among meadow vegetation and on hillocks in bogs. It is found as scattered plants, rarely as loose mats, often intermixed with other mosses: *Dicranella*



Figs. 5-7. Distribution of *Pohlia bulbifera* (Warnst.) Warnst. (5), *P. proligera* (Kinbd. ex Breidl.) Lindb. ex H. Arnell (6) and *P. annotina* (Hedw.) Lindb. (7) in Russia and adjacent regions.

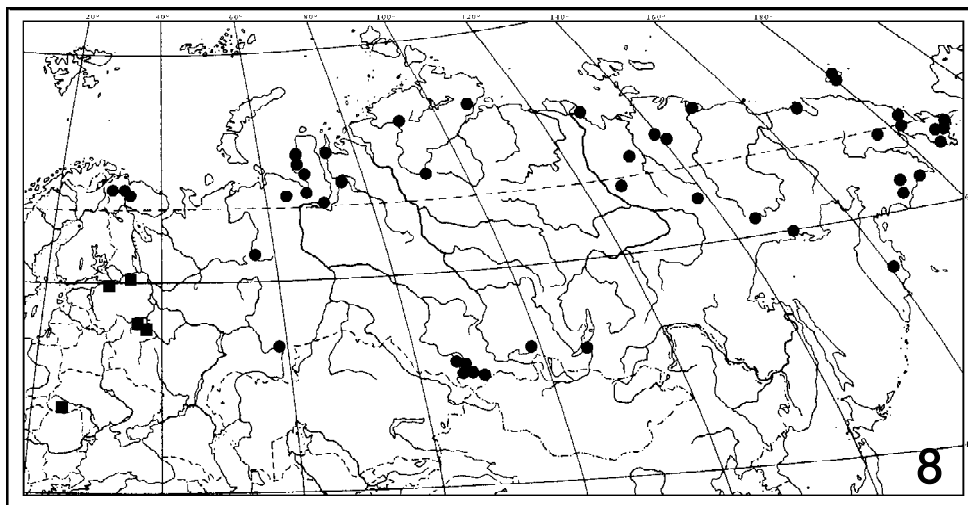


Fig. 8. Distribution of *Pohlia andrewsii* Shaw (circles) and *P. camptotrachela* (Ren. et Card.) Broth. (squares) in Russia and adjacent regions.

crispa, *Pohlia drummondii*, *P. nutans* (Hedw.) Lindb., *P. proliger*a, *Psilopilum laevigatum* etc. Sporophytes are unknown in Russia.

Distribution: *Pohlia bulbifera* grows in the north-eastern and centre of European part of Russia, in Ukraine, on north of West Siberia and north of Far East. There are a few localities in Latvia, the Taymyr Peninsula, South Siberia. This is a boreal species also spread in northern, western, central Europe, Azores, Turkey, China, Japan, North America, Greenland.

***Pohlia andrewsii* Shaw (Fig. 8).**

Habitat: usually among tundra vegetation, on fine-grained substrata of stone fields and in rock crevices; less commonly on bare soil on river banks, bluffs, landslides and roadbanks; seldom at exposed roots in forests and on bare soil in forests and meadows. It forms small loose and dense mats or grows mixed with other mosses: *Dicranella subulata*, *Pogonatum dentatum* (Brid.) Brid., *Pohlia nutans*, *P. proliger*a, etc. Sporophytes were collected in the Arctic Ural Mts., the Plateau Putorana, and Chukotka.

Distribution: in Russia *Pohlia andrewsii* occurs in tundras and mountains of Russian Arctic and Subarctic and in mountain region of South Siberia and Yakutia. There are a few localities in mountains of Timan (NE European Russia), the South Ural, and Kamchatka. This is an arctic-alpine species also known from arctic zone and mountains of Northern and Central Europe, northern North America, and Greenland.

***Pohlia proliger*a (Kindb. ex Breidl.) Lindb. ex H. Arnell (Fig. 6).**

Habitat: usually on bare soil of river and lake banks, bluffs, landslides, roadbanks; less commonly on fine soil in rock fields and rock crevices, among tundra vegetation, on decayed wood and exposed roots in forests. It forms small dense mats or grows intermixed with other mosses: *Dicranella crispa*, *D. subulata*, *Ditrichum cylindricum* (Hedw.) Grout, *Pohlia andrewsii*, *P. bulbifera*, *P. cruda* (Hedw.) Lindb., *P. drummondii*, *Psilopilum laevigatum*, etc. Sporophytes were collected in many regions of Russia.

Distribution: *Pohlia proliger*a is the most widespread species of this group. It is distributed in the Arctic, Subarctic, and Boreal zones in Russia. There are also a few localities in Latvia, Caucasus, South Siberia and Vladivostok region. This is a boreal species also spread in northern, western, central and southern Europe, Azores, Madeira, South-Western Asia, China, Japan, North America, Greenland.

***Pohlia annotina* (Hedw.) Lindb. (Fig. 7).**

Habitat: usually on bare sandy soil of stream banks, bluffs and sand-quarries; less commonly on bare soil and exposed roots in forests; rarely on fine-grained soil of rock crevices. It is found as scattered plants or loose mats intermixed with other mosses: *Atrichum tenellum* (Roehl.) B.S.G., *Leptobryum pyriforme*, *Oligotrichum hercynicum* (Hedw.) DC., *Pogonatum dentatum*. Sporophytes are unknown in Russia.

Distribution: *Pohlia annotina* occurs in the centre of European Russia, in Byelorussia and in Ukraine. There are a few localities in Archangelsk Province, the Altai and Kamchatka. This is a temperate species also known from western, central and southern Europe, Madeira, Turkey, China, North America.

Pohlia camptotrachela (Ren. et Card.) Broth. (Fig. 8).

Habitat: on bare soil of roadbanks and ditches. It is found as scattered plants or rarely as loose mats intermixed with other mosses: *Atrichum tenellum*, *Ceratodon purpureus*, *Pohlia bulbifera*, *P. filum*. Sporophytes are unknown in Russia.

Distribution: *Pohlia camptotrachela* is reported only from 5 localities in European part of Russia in Leningrad and Moscow Provinces, and also from Ukraine (the Carpathians). This is a temperate species also known from northern, western and central Europe, Azores, Madeira, Central Asia, China, Japan, western North America.

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