

Lichens of the eastern slope of Berutarube volcano, Iturup Island (the Kuril Islands, Far East of Russia)

Ezhkin, Alexander K., <https://orcid.org/0000-0002-2242-2250>, ezhkin@yandex.ru

Romanyuk, Fedor A., <https://orcid.org/0000-0003-1581-1503>, f.romanuk@imgg.ru

Institute of Marine Geology and Geophysics of the Far Eastern Branch of RAS, Yuzhno-Sakhalinsk, Russia

Abstract [PDF RUS](#)

Full text [PDF RUS](#)

Abstract. The paper presents an annotated list of lichens of the eastern slope of Berutarube volcano, one of the most inaccessible and poorly studied active volcanoes on Iturup Island. Samples of lichens were collected in August 2023 from eroded areas in the summit part of the volcano, as well as on the eastern slope along the Andrey Creek, in the upper reaches of which unnamed cold acidic springs discharge. In total, 53 species of lichens were identified from the sampling sites, of which 20 species were new to Iturup Island, 2 species were new to the Kuril Islands, and 1 species was new to the Sakhalin region. In the summit part of the volcano, lichens typical for areas of volcanic activity were identified: *Cladonia crispata*, *Cladonia straminea*, *Huea confluens*, *Lecidea plana*, *Melanelia stygia*, *Pseudephebe pubescens*, *Rhizocarpon badioatrum*, and *Umbilicaria torrefacta*. The influence of the solfataric gases of the volcano on the lichen biota of the Andrey Creek valley has not been revealed, which allows us to make the assumption that there is no direct influence of the products of the solfataric activity of Berutarube volcano on the natural environment of its eastern slopes.

Keywords:

solfataric activity, lichens, tolerant species, biodiversity, Northeast Asia

For citation: Ezhkin A.K., Romanyuk F.A. Lichens of the eastern slope of Berutarube volcano, Iturup Island (the Kuril Islands, Far East of Russia). *Geosistemy perehodnykh zon = Geosystems of Transition Zones*, 2024, vol. 8, No. 3, pp. 219–227. (In Russ., abstr. in Engl.). <https://doi.org/10.30730/gtrz.2024.8.3.219-227>; <https://www.elibrary.ru/tziazr>

Для цитирования: Ежкин А.К., Романюк Ф.А. Лишайники восточного склона вулкана Берутарубе, о. Итуруп (Южные Курильские острова, Дальний Восток России). *Геосистемы переходных зон*, 2024, т. 8, № 3, с. 219–227. <https://doi.org/10.30730/gtrz.2024.8.3.219-227>; <https://www.elibrary.ru/tziazr>

References

1. Gorshkov G.S. **1967.** [Volcanism of the Kuril Island arc]. Moscow: Nauka, 287 p. (In Russ.).
2. Degterev A.V., Kozlov D.N., Romanyuk F.A., Zharkov R.V., Rybin A.V. **2018.** The state of Berutarube volcano in 2017 (Iturup Island, Kuril Islands). *Geosistemy perehodnykh zon = Geosystems of Transition Zones*, 2(4): 386–391. (In Russ.). <https://doi.org/10.30730/2541-8912.2018.2.4.386-391>
3. Markhinin E.K., Stratula D.S. **1977.** [Hydrotherms of the Kuril Islands]. Moscow: Nauka, 212 p. (In Russ.).
4. Rassadina K.A. **1967.** [New and interesting species and forms of Hypogymnia]. *Novosti sistematiki nizshikh rastenii*, 4: 289–300. (In Russ.).
5. Trass H.H. **1979.** New and rare taxa of Cladoniaceae in the lichen-flora of the U.S.S.R. *Folia Cryptogamica Estonica*, 11: 1–8. (In Russ.).
6. Dombrovskaya A.V. **1987.** The genus *Stereocaulon* in the Far East. In: [Botanical studies beyond the Arctic Circle]. Leningrad, p. 47–65. (In Russ.).
7. Moberg R. **1995.** The lichen genus *Phaeophyscia* in China and Russian Far East. *Nordic Journal of Botany*, 15(3): 319–335. <https://doi.org/10.1111/j.1756-1051.1995.tb00158.x>
8. Dobrysh A.A. **1999.** New and rare species of the genus *Rhizocarpon* (Rhizocarpaceae, Lichenes) from Iturup (Kuriles) and Sakhalin. *Botanicheskii zhurnal*, 84(7): 133–135. (In Russ.).
9. Joneson S., Kashiwadani H., Tschabanenko S., Gage S. **2004.** Ramalina of the Kurile Islands. *The Bryologist*, 107(1): 98–106. [https://doi.org/10.1639/0007-2745\(2004\)107\[98:ROTKI\]2.0.CO;2](https://doi.org/10.1639/0007-2745(2004)107[98:ROTKI]2.0.CO;2)
10. Titov A.N. **2006.** [Mycocalicioid fungi (the order Mycocaliciales) of the Holarctic]. Moscow: KMK Scientific Press, 296 p. (In Russ.).
11. Ezhkin A.K., Zharkov R.V., Kordyukov A.V. **2015.** [Assessment of the environmental impact of the Okeanskaya geothermal power plant (Baransky Volcano, Iturup Island) using the lichen indication method]. *Vestnik DVO RAN = Vestnik of the FEB RAS*, 2: 109–117. (In Russ.).
12. Sheard J.W., Ezhkin A.K., Galanina I.A., Himelbrant D.E., Kuznetsova E., Shimizu A., Stepanchikova I., Thor G., Tønsberg T., Yakovchenko L.S., Spribille T. **2017.** The lichen genus *Rinodina* (Physciaceae, Telochistales) in Northeastern Asia. *The Lichenologist*. 49(6): 617–672. <https://doi.org/10.1017/S0024282917000536>

13. Bogacheva A.V., Bulakh E.M., Bukharova N.V., Galanina I.A., Egorova L.N., Ezhkin A.K., Petrunenko E.A. **2018**. [Mycobiota of the Far Eastern oak forests]. Vladivostok: Dal'nauka, 200 p. (In Russ.).
14. Ezhkin A.K., Jørgensen P.M. **2018**. New records of *Pannariaceae* (Lichenized Ascomycota) from Sakhalin and the Kuril Islands, Russian Far East. *Evansia*, 35(2): 43–52. <https://doi.org/10.1639/0747-9859-35.2.043>
15. Galanina I.A., Ezhkin A.K. **2019**. The genus *Rinodina* in the Kuril Islands (Russian Far East). *Turczaninowia*, 22(4): 5–16. <https://doi.org/10.14258/turczaninowia.22.4.1>
16. Tolpysheva T.Yu., Varlygina T.I. **2021**. To study the lichens of Iturup Island (Kuril Islands). *Bulleten' Moskovskogo obshchestva ispytatelei prirody. Otdel biologicheskii*, 126(3): 20–24. (In Russ.).
17. Chesnokov S.V., Konoreva L.A. **2021**. Addition to the lichen flora of Iturup Island (Sakhalin Region, Russian Far East). *Novosti sistematiki nizshikh rastenii*, 55: 379–392. <https://doi.org/10.31111/nsnr/2021.55.2.379>
18. Ezhkin A.K. **2019**. Lichens of wood substrates in areas of solfataric activity on Southern Kuriles. *Geosistemy perehodnykh zon = Geosystems of Transition Zones*, 3(2): 256–263. (In Russ.). <https://doi.org/10.30730/2541-8912.2019.3.2.256-263>
19. Ezhkin A.K. **2022**. Epigeic lichens in thermal habitats on the Southern Kuriles. *Geosistemy perehodnykh zon = Geosystems of Transition Zones*, 6(4): 380–387. (In Russ.). <https://doi.org/10.30730/gtrz.2022.6.4.380-387>
20. Shimizu A. **2004**. Community structure of lichens in the volcanic highlands of Mt. Tokachi, Hokkaido, Japan. *Bryologist*, 107(2): 141–151. [https://doi.org/10.1639/0007-2745\(2004\)107\[0141:CSOLIT\]2.0.CO;2](https://doi.org/10.1639/0007-2745(2004)107[0141:CSOLIT]2.0.CO;2)
21. Romanyuk F.A. **2024**. Volcanological and geoecological studies on Iturup Island (Kuril Islands) in 2023. *Geosistemy perehodnykh zon = Geosystems of Transition Zones*, 8(1): 56–63. (In Russ.). <https://doi.org/10.30730/gtrz.2024.8.1.056-063>
22. Stepanchikova I.S., Gagarina L.V. **2014**. Collection, identification and storage of lichenological collections. In: M.P. Andreev, D.E. Himelbrant (Eds). *The lichen flora of Russia: Biology, ecology, diversity, distribution and methods to study lichens*. Moscow; St. Petersburg: KMK Scientific Press, p. 204–219. (In Russ.).
23. Ezhkin A.K., Schumm F. **2018**. New and noteworthy records of lichens and allied fungi from Sakhalin Island, Russian Far East, II. *Folia Cryptogamica Estonica*, 55: 45–50. <https://doi.org/10.12697/fce.2018.55.06>
24. Davydov E.A., Yakovchenko L., Konoreva L., Chesnokov S., Ezhkin A., Galanina I., Paukov A. **2021**. New records of lichens from the Russian Far East. II. Species from forest habitats. *Opuscula Philolichenum*, 20: 54–70. <https://doi.org/10.5962/p.388274>