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# Bryophytes recorded in the Radhošť National Nature Reserve (Moravskoslezské Beskydy Mts) during the survey in 2020.

Vítězslav Plášek

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**Abstract:** The article presents results of the recent bryological survey in the Radhošť National Nature Reserve. Totally, 133 bryophyte taxa were found, of which 40 species of liverworts and 93 taxa of mosses. Among the most important records can be mentioned liverworts *Chiloscyphus pallescens*, *Liochlaena lanceolata*, *Nowellia curvifolia*, *Riccardia latifrons*, *Riccardia palmata* or *Scapania mucronata* and mosses *Brachydontium trichodes*, *Campylostelium saxicola*, *Fissidens pusillus*, *Lewinskya striata*, and *Oxystegus tenuirostris*.

**Key words:** bryoflora, diversity, liverworts, mosses, Moravia, Silesia, Western Carpathians

## Introduction

The Radhošť National Nature Reserve is a complex of deciduous and coniferous forests situated on the northern slopes of Radhošť Mt. (1129 m a.s.l.), in the central part of the Radhošťská horantina mountain range.

The area is covered with deciduous or mixed forests. In the lower and middle parts occur mainly beech forests (Weissmannová *et al*. 2004). Above altitude of 800 m a.s.l., most abundantly grow acidophilic beech forests (*Luzulo-Fagion*). The deep and narrow valleys along the mountain streams are overgrown with *Tilio-Acerion* forest communities. In the highest places of the reservation, supramontane spruce forests predominate (*Athyrio alpestris-Piceion*).

Comprehensive research of bryophytes has only been carried out at the site once in the past (cf. Plášek 2011). A total of 95 taxa (26 liverworts and 69 mosses) were found at that time, which corresponds to the species richness of this group in nature-friendly forest communities with a mosaic of suitable substrate (forest ground, decaying wood, stones, rock outcrops, valley of streams, bark of deciduous trees, etc. - see Fig. 1). Subsequently, recent survey in 2020 revealed 133 taxa of bryophytes (40 liverworts and 93 mosses).

## Methods

Between June and August 2020, six visits of the study area were made by author. Nomenclature and threat categories follow to the Check and Red list of bryophytes published by Kučera *et al*. (2012) with exceptions (cf. Sawicki *et al*. 2017). Taxa belonging to the threat categories are marked by red color. Bryophytes that were collected and herbarized (herb. OSTR) are marked by star (*).

Abbreviations of the threat category according to the red list (Kučera et al. 2012): **DD** - species with insufficiently known distribution, **LR-nt** - species with lower degree of threat (close to threat), **LC-att** - species requiring attention, **LC** - species without threat.



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## Results

A LIST OF RECORDED BRYOPHYTES (2020)

*Liverworts*

***A**neura pinguis*,
***B**arbilophozia barbata*, **B. hatcheri*, **B. lycopodioides*, *Bazzania trilobata*, *Blepharostoma trichophyllum*,
***C**alypogeia azurea*, *C. integristipula*, **C. muelleriana*, *Cephalozia bicuspidata*, **C. lunulifolia*, **Cephaloziella divaricata*, *Chiloscyphus coadunatus*, **C. pallescens* (LC-att), *C. polyanthos*, *C. profundus*, *Conocephalum conicum*,
***F**rullania dilatata*,
***L**epidozia reptans*, ***Liochlaena lanceolata* (LR-nt), *Lophozia ventricosa*,
***M**archantia polymorpha*, *Metzgeria furcata*,
***Nowellia curvifolia* (LC-att),
***O**rthocaulis attenuatus*,
***P**ellia epiphylla*, *P. neesiana*, *Plagiochila asplenioides*, *P. porelloides*, *Porella platyphylla*, *Ptilidium ciliare*, *P. pulcherrimum*,
***R**adula complanata*, **Riccardia latifrons* (LC-att), **R. palmata* (LC-att),
***Scapania mucronata* (DD), **S. nemorea*, **S. umbrosa*, **S. undulata*, **Solenostoma gracillimum*

*Mosses*

***A**mblystegium serpens*, **Andreaea rupestris*, *Anomodon attenuatus*, *Atrichum undulatum*,
***Brachydontium trichodes* (LC-att), *Brachytheciastrum velutinum*, *Brachythecium rivulare*, *B. rutabulum*, *B. salebrosum*, *Bryum argenteum*, *B. caespiticium*, *B. moravicum*, **B. pseudotriquetrum*,
***C**alliergonella cuspidata*, **Campylostelium saxicola* (LR-nt), *Ceratodon purpureus*, *Climacium dendroides*, *Ctenidium molluscum*, **Cynodontium polycarpon*,
***D**ichodontium pellucidum*, *Dicranella heteromalla*, *Dicranodontium denudatum*, *Dicranum montanum*, **D. polysetum*, *D. scoparium*,
***E**urhynchium angustirete*,
***F**issidens dubius*, **F. pusillus* (LC-att), **F. taxifolius*, *Grimmia hartmanii*,
***H**erzogiella seligeri*, **Heterocladium heteropterum*, *Homalia trichomanoides*, *Homalothecium sericeum*, **Hygrohypnum luridum*, *Hylocomium splendens*, **Hymenoloma crispulum*, **Hypnum andoi*, *H. cupressiforme*,
***I**sothecium alopecuroides*,
***L**escuraea incurvata*, *Leucobryum glaucum*, **Lewinskya affinis*, **L. speciosa*, **L. striata* (LC-att),
***M**nium hornum*,
***N**yholmiella obtusifolia*,
***O**rthotrichum pallens*, **O. stramineum*, **Oxyrrhynchium hians*, **O. schleicheri*, *Oxystegus tenuirostris* (LC-att),
***P**araleucobryum longifolium*, *Philonotis fontana*, *Plagiomnium affine*, *P. undulatum*, *Plagiothecium curvifolium*, **P. denticulatum*, *P. laetum*, **P. succulentum*, *P. undulatum*, *Platygyrium repens*, *Pleurozium schreberi*, *Pogonatum aloides*, *P. urnigerum*, *Pohlia nutans*, **P. wahlenbergii*, *Polytrichum commune*, *P. formosum*, *P. juniperinum*, *P. piliferum*, *Pseudoleskeella nervosa*, *Pseudotaxiphyllum elegans*, *Pterigynandrum filiforme*, *Pylaisia polyantha*,
***R**acomitrium aciculare*, *Rhizomnium punctatum*, **Rhynchostegium murale*, *R. riparioides*, *Rhytidiadelphus loreus*, *R. squarrosus*,
***S**anionia uncinata*, **Schistidium apocarpum*, *Sciuro-hypnum populeum*, *S. reflexum*, **S. starkii*, *Sphagnum girgensohnii*, *S. squarrosum*, *Syntrichia ruralis*,
***T**etraphis pellucida*, *Thuidium tamariscinum*,
***U**lota bruchii*, **U. crispa*



**Fig 1:** The varied mosaic of preserved habitats in the Radhošť National Nature Reserve is the basis of the high species diversity of bryophytes.

## Discussion

Detail bryological survey in the Radhošť National Nature Reserve was done by author in 2011 and subsequently repeated it in 2020. The results of latter research are presented in the paper. While visiting in 2011 (Plášek 2011) brought the finding of 93 bryophytes (26 species of liverworts and 69 species of mosses), in 2020 the number of taxa increased to 133 (40 species of liverworts and 93 taxa of mosses). Specifically, this means that 37 species of bryophytes (14 liverworts and 23 bryophytes) were newly recorded for the studied area. The species diversity of bryophytes has recently increased by 25 % there.

On the other hand, in 2020, only two moss species (*Grimmia pulvinata*, *Rhabdoweisia fugax*) recorded during previous research in 2011, have not been confirmed. However, the fact does not have to mean that the species have vanished from the National Nature Reserve. It is possible that their populations are limited to one location within the area and could be overlooked. These species do not belong to the mosses sensitive to environmental changes and should therefore not become extinct due to minor habitat conversion.

Moreover, one historically reported liverwort (*Solenostoma hyalinum*) was not found recently there. The species was found in the study area in 1907 by Podpěra, but was identified as *Nardia scalaris* by him. Afterwards Váňa revised the specimen as *Jungermannia hyalina* /=*Solenostoma hyalinum*/ (cf. Duda & Váňa 1971, p. 39). Unfortunately, the species was not confirmed neither in 2011 nor 2020.

In conclusion, it can be stated that the natural conditions in the Radhošť National Nature Reserve are in very good quality and the species diversity of bryophytes may continue to increase in the future.

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**Author's address:** Vítězslav Plášek, Dept. of Biology and Ecology, University of Ostrava, Chittussiho 10, CZ-710 00 Ostrava, Czech Republic.
E-mail: vitezslav.plasek@osu.cz