

Contribution to the bryophyte flora and mycota of Bulgaria: I. Bryophytes and larger fungi from Uchilishtna Gora Managed Reserve

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Abstract. The bryophyte flora and mycota of Uchilishtna Gora Managed Reserve were studied. They comprise 46 species of mosses, eight species of liverworts and 47 larger fungi (ascomycetes and basidiomycetes). Comments on the state of their populations in the reserve and general distribution are provided. New chorological data is presented too. Five bryophyte and three fungal species included in the respective national Red Lists were recorded from this protected area.

Key words: bryophytes, Bulgaria, larger fungi, liverworts, new records, Uchilishtna Gora Managed Reserve

Introduction

The bryophyte flora and mycota of Bulgaria are relatively well studied but poorly known yet. There are *ca.* 110 publications reporting bryophytes from various parts of the country (reviewed in Ganeva & Natcheva 2005). Most studies focus on mountainous regions, especially those within the national and nature parks, where *a priori* a higher number of species is expected due to high habitat quality and diversity. Very few studies deal specifically with bryophytes of lowland areas and hilly regions (e.g. Natcheva & Ganeva 2006). The landscape at lower elevations is highly influenced by human activities and habitats are frequently disturbed.

This series of papers aims at contributing to the knowledge of the bryophyte flora of Bulgaria by presenting chorological data about particular areas that have not been studied in detail. Often they are not geographically but rather functionally delimited, e.g. nature reserves, protected sites, etc.

Knowledge of fungal diversity in the protected ar-

reas in Bulgaria is still insufficient. Contemporary information on the species diversity and conservation of larger fungi was collected and published during the past years as a result of field studies within the projects for preparation and updating of the management plans of the Pirin National Park, Rila National Park, Balgarka Nature Park, Vitosha Nature Park, Dupkata, Chervenata Stena, Kupena, Rilomanastirska Gora reserves, etc. (Gyosheva & Nedelin 2015; Gyosheva & al. 2015; Stoykov & al. 2015; Velev & al. 2015, 2016).

This first contribution presents the bryophyte and fungal diversity of Uchilishtna Gora Managed Reserve. There is no earlier data on the bryophytes and fungi in this reserve. It lies in the Forebalkan floristic region. In general, there are very few records of bryophytes and larger fungi in this region: only 20 bryophyte species (Ganeva & Natcheva 2003; Natcheva & Ganeva 2005; Papp & al. 2006) and about 100 larger ascomycetes and basidiomycetes (Dimitrova & Gyosheva 2009, 2010; Denchev & Assyov 2010; Assyov & al. 2010, 2012) have been reported.

Materials and methods

Uchilishtna Gora Managed Reserve is situated near Bozhenitsa village, Botevgrad district (Fig. 1). It lies on the northeastern slopes of peak Visokata Mogila (820 m a.s.l.), which is part of Lakavishki Ridge, Forebalkan (*Western*) floristic subregion. The area of the reserve is 134.68 ha. The elevation is 425–820 m a.s.l.

The climate is temperate-continental. The relief is low-mountainous, with well developed gullies and ridges. The bedrock consists of lower Cretaceous sediments (sandstones and marls, Angelov & al. 1992). The soils are slightly acidic light-grey forest soils (Albic Luvisols).

The reserve was designated for conservation of old oak forests (mainly *Qercus frainetto* Ten. and *Q. dalechampii* Ten., but also *Q. cerris* L., *Fagus sylvatica* L., and *Carpinus betulus* L.). The stand age is 50–200 years and single trees reach a height of 30 m (Pavlov & al. 1986).

The field studies were carried out in 2015 using the transect method. Transects were selected in order to cover the entire range of microhabitats for bryophytes and larger fungi.

Many mosses and fungi inhabit similar substrates (moist soil, rotten wood, bark of living trees, burnt soil and wood in fireplaces etc.). Fungi often develop among mosses as saprotrophs or as parasites (Arnolds 1992; Lisiewska 1992). This makes possible and successful parallel investigations of bryophytes and fungi.

Data about the substrata and host plants of the fungal species were collected in the course of the work. Voucher specimens of all species were deposited in the Bryophyte and Mycological Collections of the In-

stitute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences (SOM-B and SOMF). The nomenclature follows Söderström & al. (2002) for liverworts, Hill & al. (2006) for mosses, and Kirk & Ansell (2004) for fungi.

Results

Bryophytes

As a result of the present study, 54 bryophyte species were found. Of them, eight species were liverworts (*Marchantiophyta*) and 46 species were mosses (*Bryophyta*) (Table 1). The most important microhabitats for bryophytes are old trees (mainly beech and hornbeam) and small temporary bare soil patches where a large number of species were found.

Five species are included in the *Red List of the Bryophytes in Bulgaria*: two Endangered (EN), one Near Threatened (NT) and two Data Deficient (DD) (Natcheva & al. 2006).

All but two species – *Thamnobryum alopecurum* and *Syntrichia papillosa* – are new to the Forebalkan floristic region.

Larger fungi

The total number of larger fungi recorded during the present study is 47. Of them, 14 species belong to *Ascomycota* (3 classes, 3 orders, 7 families, 14 genera) and 33 species belong to *Basidiomycota* (3 classes, 8 orders, 18 families, 25 genera). The most species-rich families are *Xylariaceae* (6) among the ascomycetes and *Polyporaceae* (7) from the basidiomycetes.

The greatest diversity of fungi was found in old oak forests and in mixed oak and beech forests in the higher parts of the reserve. Lignicolous fungi on dead and living wood (saprotrophs and parasites) prevail among the studied taxa: 39 species. This is characteristic of old forests (Parmasto & Parmasto 1997). Five wood parasites: *Armillaria mellea*, *Fistulina hepatica*, *Fomes fomentaris*, *Ganoderma lucidum*, and *Phellinus igniarius* are of high economic importance in terms of the sanitary status of the forest ecosystems.

Three species of conservation value, included in the *Red List of Fungi in Bulgaria* (Gyosheva & al. 2006), were recorded: *Discina ancilis* and *Hericium cirrhatum* – Vulnerable (VU), and *Lenzites warnieri* – Near Threatened (NT). They are new records for the Forebalkan floristic region. *Discina ancilis* was report-

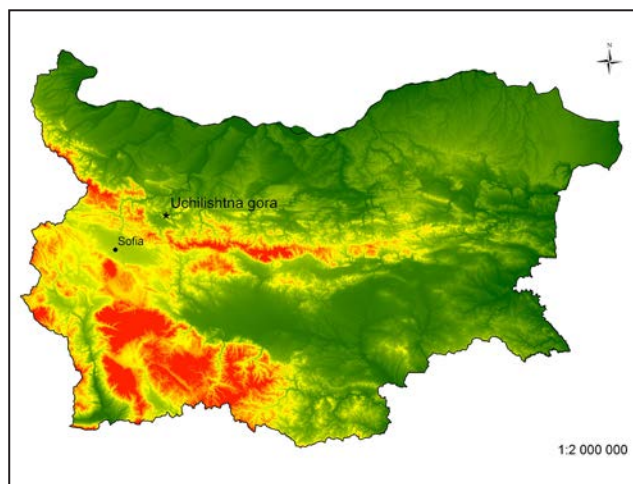


Fig. 1. Map of Bulgaria showing the location of Uchilishtna Gora Managed Reserve.

ed so far from Balkan Range (*Western*), Vitosha region, Znepole region, and Pirin Mts (Dimitrova & Gyosheva 2009; Assyov & al. 2012). *Hericium cirrhatum* and *L. warnieri* possibly are not rare species. The ear-

lier records for each of these species are in 10 floristic regions (Denchev & Assyov 2010).

The list of all fungal taxa, their conservation status and substrata are presented in Table 2.

Table 1. List of bryophyte taxa in Uchilishtna Gora Managed Reserve, their conservation status, location (geographic coordinates, elevation), and substrate (EN – Endangered, NT – Near Threatened, DD – Data Deficient).

Nº	Taxon	Conservation status	Location	Substrate
Liverworts (<i>Marchantiophyta</i>)				
1.	<i>Conocephalum conicum</i> (L.) Underw.		42.989245°N 23.830316°E (452 m)	soil, rock
2.	<i>Frullania dilatata</i> (L.) Dumort.		23.831152°E 42.983413°N (543 m) 23.830316°E 42.989245°N (452 m)	bark (<i>Quercus</i> sp., <i>Fagus sylvatica</i>)
3.	<i>Jungermannia leiantha</i> Grolle		23.833705°E 42.982845°N (522 m)	rock
4.	<i>Lophocolea heterophylla</i> (Schrad.) Dumort.		23.830316°E 42.989245°N (452 m)	rotten wood (<i>Fagus sylvatica</i>)
5.	<i>Metzgeria furcata</i> (L.) Dumort.		23.833632°E 42.984757°N (492 m)	rock, bark
6.	<i>Plagiochilla porelloides</i> (Torr. ex Nees) Lindenb.		23.83168°E 42.987714°N (462 m) 23.831943°E 42.982409°N (553 m) 23.830848°E 42.985172°N (533 m) 23.833632°E 42.984757°N (492 m)	soil, rock
7.	<i>Porella platyphylla</i> (L.) Pfeiff.		23.830383°E 42.988195°N (449 m) 23.833632°E 42.984757°N (492 m)	soil, bark (<i>Carpinus betulus</i>)
8.	<i>Radula complanata</i> (L.) Dumort.		23.830316°E 42.989245°N (452 m)	bark (<i>Carpinus betulus</i>)
Mosses (<i>Bryophyta</i>)				
1.	<i>Amblystegium subtile</i> (Hedw.) Schimp.		23.830316°E 42.989245°N (452 m)	soil
2.	<i>Anomodon attenuatus</i> (Hedw.) Huebener		23.830316°E 42.989245°N (452 m) 23.831943°E 42.982409°N (553 m) 23.833632°E 42.984757°N (492 m)	bark, rock
3.	<i>Anomodon viticulosus</i> (Hedw.) Hook. & Taylor		23.833632°E 42.984757°N (492 m)	bark
4.	<i>Atrichum angustatum</i> (Brid.) Bruch & Schimp.	DD	23.833632°E 42.984757°N (492 m)	soil
5.	<i>Atrichum undulatum</i> (Hedw.) P.Beauv.		23.830316°E 42.989245°N (452 m) 23.83168°E 42.987714°N (462 m) 23.833705°E 42.982845°N (523 m)	soil
6.	<i>Brachytheciastrum velutinum</i> (Hedw.) Ignatov & Huttunen		23.833705°E 42.982845°N (523 m) 23.833632°E 42.984757°N (492 m)	soil, bark, rotten wood
7.	<i>Brachythecium glareosum</i> (Bruch ex Spruce) Schimp.		23.830848°E 42.985172°N (533 m)	soil
8.	<i>Brachythecium rivulare</i> Schimp.		23.830316°E 42.989245°N (452 m)	rock
9.	<i>Brachythecium rutabulum</i> (Hedw.) Schimp.		23.833632°E 42.984757°N (492 m)	soil
10.	<i>Bryum capillare</i> Hedw.		23.830383°E 42.988195°N (449 m) 23.833705°E 42.982845°N (522 m)	bark, soil
11.	<i>Ctenidium molluscum</i> (Hedw.) Mitt.		23.831943°E 42.982409°N (553 m) 23.833632°E 42.984757°N (492 m)	soil, rock
12.	<i>Dicranum scoparium</i> Hedw.		23.83168°E 42.987714°N (462 m)	soil, rock, bark
13.	<i>Diphyscium foliosum</i> (Hedw.) D.Mohr		23.833632°E 42.984757°N (492 m)	soil
14.	<i>Ditrichum heteromallum</i> (Hedw.) E.Britton		23.833632°E 42.984757°N (492 m)	soil
15.	<i>Ditrichum pallidum</i> (Hedw.) Hampe	EN	23.833849°E 42.983352°N (523 m)	soil
16.	<i>Fissidens bryoides</i> Hedw.		23.831487°E 42.986902°N (485 m)	soil
17.	<i>Fissidens exilis</i> Hedw.	DD	23.833705°E 42.982845°N (523 m) 23.831943°E 42.982409°N (553 m) 23.831487°E 42.986902°N (485 m) 23.833632°E 42.984757°N (492 m)	soil
18.	<i>Fissidens taxifolius</i> Hedw.		23.831487°E 42.986902°N (485 m) 23.833632°E 42.984757°N (492 m)	soil
19.	<i>Grimmia trichophylla</i> Grev.		23.833705°E 42.982845°N (522 m)	rock

Table 1. Continuation.

Nº	Taxon	Conservation status	Location	Substrate
20.	<i>Hedwigia ciliata</i> (Hedw.) P.Beauv.		23.833705°E 42.982845°N (522 m)	rock
21.	<i>Hypnum cupressiforme</i> Hedw.		23.830848°E 42.985172°N (533 m) 23.833705°E 42.982845°N (522 m) 23.830316°E 42.989245°N (452 m)	soil, rock, bark, rotten wood
22.	<i>Isothecium alopecuroides</i> (Lam. ex Dubois) Isov.		23.830316°E 42.989245°N (452 m) 23.833632°E 42.984757°N (492 m) 23.833705°E 42.982845°N (522 m)	soil, rock, bark
23.	<i>Leucodon sciuroides</i> (Hedw.) Schwägr.		23.833849°E 42.983352°N (523 m) (c.sp.) 23.830848°E 42.985172°N (533 m)	bark
24.	<i>Mnium stellare</i> Hedw.		23.830316°E 42.989245°N (452 m) 23.833632°E 42.984757°N (492 m)	soil
25.	<i>Neckera bessi</i> (Lobarz.) Jur.		23.833705°E 42.982845°N (522 m) 23.833632°E 42.984757°N (492 m)	rock, bark
26.	<i>Orthotrichum affine</i> Schrad. ex Brid.		23.831152°E 42.983413°N (543 m) 23.831487°E 42.986902°N (485 m) 23.830316°E 42.989245°N (452 m)	bark (<i>Quercus</i> sp., <i>Carpinus betulus</i>)
27.	<i>Orthotrichum patens</i> Bruch ex Brid.	NT	23.833849°E 42.983352°N (523 m) 23.830848°E 42.985172°N (533 m)	bark (<i>Quercus</i> sp., <i>Carpinus betulus</i>)
28.	<i>Orthotrichum striatum</i> Hedw.		23.833849°E 42.983352°N (523 m) 23.830848°E 42.985172°N (533 m) 23.831152°E 42.983413°N (543 m) 23.831487°E 42.986902°N (485 m)	bark (<i>Quercus</i> sp., <i>Carpinus betulus</i>)
29.	<i>Oxyrrhynchium hians</i> (Hedw.) Loeske		23.830316°E 42.989245°N (452 m)	soil
30.	<i>Paraleucobryum longifolium</i> (Hedw.) Loeske		23.830316°E 42.989245°N (452 m) 23.833705°E 42.982845°N (522 m)	rock, bark
31.	<i>Plagiomnium cuspidatum</i> (Hedw.) T.J.Kop.		23.830316°E 42.989245°N (452 m) 23.833632°E 42.984757°N (492 m)	soil
32.	<i>Plagiomnium undulatum</i> (Hedw.) T.J.Kop.		23.830316°E 42.989245°N (452 m) 23.833632°E 42.984757°N (492 m)	soil
33.	<i>Plagiothecium cavifolium</i> (Brid.) Z.Iwats.		23.833632°E 42.984757°N (492 m)	soil
34.	<i>Pleuridium acuminatum</i> Lindb.		23.833849°E 42.983352°N (523 m)	soil
35.	<i>Polytrichum commune</i> Hedw.		23.833705°E 42.982845°N (523 m) 23.833632°E 42.984757°N (492 m)	soil
36.	<i>Pseudoleskeella nervosa</i> (Brid.) Nyholm		23.830383°E 42.988195°N (449 m)	bark
37.	<i>Pseudoscleropodium purum</i> (Hedw.) M. Fleisch.		23.83168°E 42.987714°N (462 m) 23.831487°E 42.986902°N (485 m)	soil
38.	<i>Pylaisia polyantha</i> (Hedw.) Schimp.		23.833849°E 42.983352°N (523 m) 23.830848°E 42.985172°N (533 m) 23.831152°E 42.983413°N (543 m) 23.831487°E 42.986902°N (485 m)	soil, rock
39.	<i>Rhizomnium punctatum</i> (Hedw.) T.J.Kop		23.830316°E 42.989245°N (452 m)	soil, rotten wood
40.	<i>Scistidium apocarpum</i> (Hedw.) Bruch & Schimp.		23.833632°E 42.984757°N (492 m) 23.830316°E 42.989245°N (452 m)	rock
41.	<i>Sciuro-hypnum populeum</i> (Hedw.) Ignatov & Huttunen		23.831943°E 42.982409°N (553 m) 23.830848°E 42.985172°N (533 m) 23.833632°E 42.984757°N (492 m) 23.830316°E 42.989245°N (452 m)	bark, rock, soil
42.	<i>Syntrichia papillosa</i> (Wilson) Jur.	EN	23.833849°E 42.983352°N (523 m)	soil, bark, rock
43.	<i>Thamnobryum alopecurum</i> (Hedw.) Gangulee		23.830316°E 42.989245°N (452 m)	rock
44.	<i>Thuidium delicatulum</i> (Hedw.) Schimp.		23.831487°E 42.986902°N (485 m) 23.833632°E 42.984757°N (492 m)	soil
45.	<i>Thuidium recognitum</i> (Hedw.) Lindb.		23.833632°E 42.984757°N (492 m)	soil
46.	<i>Tortula subulata</i> Hedw.		23.833632°E 42.984757°N (492 m) 23.833705°E 42.982845°N (522 m)	soil

Table 2. List of fungal taxa in Uchilishtna Gora Managed Reserve, their conservation status, location of species of special interest (geographic coordinates, elevation), and substrate (VU – Vulnerable; NT – Near Threatened).

Nº	Taxon	Conservation status	Location	Substrate
	Ascomycota			
	Leotiomycetes			
	Helotiales			
	Helotiaceae			
1.	<i>Bisporella citrina</i> (Batsch) Korf & S.E. Carp.			dead wood
2.	<i>Chlorociboria aeruginascens</i> (Nyl.) Kanouse ex C.S. Ramamurthi, Korf & L.R. Batra			dead wood
	Pezizomycetes			
	Pezizales			
	Discinaceae			
3.	<i>Discina ancilis</i> (Pers.) Sacc.	VU	23.83185°E 42.98245°N (556 m)	soil
	Morchellaceae			
4.	<i>Mitrophora semilibera</i> (DC.) Lév.		23.83405°E 42.98433°N (517 m)	soil
5.	<i>Morchella esculenta</i> (L.) Pers.		23.83166°E 42.98773°N (427 m)	soil
	Pyronemataceae			
6.	<i>Scutellinia scutellata</i> (L.) Lambotte			moist soil
	Sarcoscyphaceae			
7.	<i>Sarcoscypha coccinea</i> (Jacq.) Sacc.		23.83185°E 42.98245°N (555 m)	dead wood
	Sordariomycetes			
	Xylariales			
	Diatrypaceae			
8.	<i>Diatrype disciformis</i> (Hoffm. : Fr.) Fr.			dead wood
	Xylariaceae			
9.	<i>Biscogniauxia nummularia</i> (Bull. : Fr.) Kuntze			dead wood
10.	<i>Hypoxylon fragiforme</i> (Pers. : Fr.) J. Kickx f.			dead wood
11.	<i>Hypoxylon multifforme</i> (Fr. : Fr.) Fr.			dead beech wood
12.	<i>Kretzschmaria deusta</i> (Hoffm. : Fr.) P.M.D. Martin			dead beech wood
13.	<i>Nemania serpens</i> (Pers. : Fr.) Gray			dead wood
14.	<i>Xylaria polymorpha</i> (Pers. : Fr.) Grev.			dead wood
	Basidiomycota			
	Agaricomycetes			
	Agaricales			
	Agaricaceae			
15.	<i>Bovista plumbea</i> Pers. : Pers.			soil
16.	<i>Lycoperdon pyriforme</i> Schaeff. : Pers.			dead wood
	Hydnangiaceae			
17.	<i>Laccaria laccata</i> (Scop. : Fr.) Cooke			soil
	Fistulinaceae			
18.	<i>Fistulina hepatica</i> (Schaeff. : Fr.) With.		23.83166°E 42.98773°N (429 m)	living and dead oak wood
	Marasmiaceae			
19.	<i>Gymnopus dryophilus</i> (Bull. : Fr.) Murrill			soil
20.	<i>Gymnopus fusipes</i> (Bull. : Fr.) Gray			soil
21.	<i>Marasmius rotula</i> (Scop. : Fr.) Fr.			dead wood
	Physalacriaceae			
22.	<i>Armillaria mellea</i> (Vahl : Fr.) P. Kumm.			living and dead wood

Table 2. Continuation.

Nº	Taxon	Conservation status	Location	Substrate
23.	<i>Armillaria socialis</i> (DC. : Fr.) Fayod Pleurotaceae			dead wood
24.	<i>Pleurotus cornucopiae</i> (Paulet) Rolland Schizophyllaceae			dead wood
25.	<i>Schizophyllum commune</i> Fr. : Fr. Auriculariales Auriculariaceae			dead wood
26.	<i>Auricularia auricula-judae</i> (Bull. : Fr.) Quél.			wood of <i>Sambucus nigra</i> L.
27.	<i>Auricularia mesenterica</i> (Dicks. : Fr.) Pers.			dead wood
28.	<i>Exidia glandulosa</i> (Bull. : Fr.) Fr. Gastrales Gastraceae			dead wood
29.	<i>Geastrum fimbriatum</i> Fr. Hymenochaetales Hymenochaetaceae			soil
30.	<i>Phellinus ferruginosus</i> (Schrad. : Fr.) Pat.			dead oak wood
31.	<i>Phellinus igniarius</i> (L. : Fr.) Quél. Polyporales Fomitopsidaceae			living beech wood
32.	<i>Daedalea quercina</i> (L. : Fr.) Pers.			dead oak wood
33.	<i>Ganoderma lucidum</i> (Curtis : Fr.) P. Karst. Polyporaceae			dead oak wood
34.	<i>Cerrena unicolor</i> (Bull. : Fr.) Murill		23.83405°E 42.98433°N (516 m)	dead beech wood
35.	<i>Fomes fomentarius</i> (L. : Fr.) J.J. Kickx			living and dead beech wood
36.	<i>Lenzites betulina</i> (L. : Fr.) Fr.			dead wood
37.	<i>Lenzites warnieri</i> Durieu & Mont.	NT	23.83185°E 42.98245°N (556 m)	dead oak wood
38.	<i>Pycnoporus cinnabarinus</i> (Jacq. : Fr.) P. Karst.			dead wood
39.	<i>Trametes hirsuta</i> (Wulfen : Fr.) Pilát			dead wood
40.	<i>Trametes versicolor</i> (L. : Fr.) Lloyd Russulales Hericiaceae			dead wood
41.	<i>Hericium cirrhatum</i> (Pers. : Fr.) Nikol. Peniophoraceae	VU	23.83405°E 42.98433°N (516 m)	dead oak wood
42.	<i>Peniophora quercina</i> (Pers. : Fr.) Cooke Stereaceae			dead oak wood
43.	<i>Stereum hirsutum</i> (Willd. : Fr.) Gray			dead wood
44.	<i>Stereum rugosum</i> (Pers. : Fr.) Fr.			dead wood
45.	<i>Stereum subtomentosum</i> Pouzar Dacrymycetes Dacrymycetales Dacrymycetaceae			dead beech wood
46.	<i>Calocera cornea</i> (Batsch : Fr.) Fr. Tremellomycetes Tremellales Tremellaceae			dead beech wood
47.	<i>Tremella mesenterica</i> Retz. : Fr.		42.98433°N 23.83405°E (515 m)	dead oak wood

Discussion

The species diversity of bryophytes in Uchilishtna Gora Managed Reserve is relatively rich. This is due to the presence of well-preserved diverse habitats. Actual threats of anthropogenic origin were not observed. However, earlier signs of human activities could be detected in some parts of the reserve, where the forests have been coppiced in the past. Despite being in an area under strict protection, bryophytes are threatened by windfalls, which have affected some parts of the reserve area.

Mention deserves the observation of the moss *Leucodon sciuroides* with numerous sporophytes on a single tree (*Quercus cerris*). The species is widespread but seldom reproduces sexually in Europe. A revision of herbarium specimens of *L. sciuroides* in SOM-B showed that all gatherings of the species in Bulgaria are of non-sporulating (sterile or female) plants. So far sporophytes have been observed only twice in the southern part of the country (Mt Strandza and the central part of Rhodopi Mts, pers. obs.).

Atrichum angustatum (DD) was reported for the first time in Bulgaria by Stefanoff & Petrov (1962) for Balkan Range (*Eastern*) and Pirin Mts, without precise locations. This led to its evaluation as Data Deficient in the *Red List of the Bryophytes in Bulgaria* (Natcheva & al. 2006). The species has not been observed until recently, when it has been found in Mt Strandza at several locations (Papp & al. 2011), and subsequently in the Balkan Range (*Western*) (unpubl. data). In the Uchilishtna Gora Managed Reserve the species forms small patches on disturbed soil along a forest trail.

Ditrichum pallidum (EN) was first reported in the same publication as the previous species (Stefanoff & Petrov 1962) for Mt Strandza, without precise location. It was also collected in Balkan Range (*Eastern*) (Sl. Petrov, herbarium data). In 2011, the species was confirmed for Mt Strandza at one site (Papp & al. 2011) and later it was collected in Balkan Range (*Western*) (unpubl.). This is the fourth confirmed location of *D. pallidum* in Bulgaria. At all known locations the species was found growing together with *A. angustatum*, indicating similar ecological requirements.

Fissidens exilis (DD) was first reported for Bulgaria by Stefanoff & Petrov (1962), without location, just in "West Bulgaria". This is the first confirmed location of *F. exilis*. In the Uchilishtna Gora Managed Reserve, the species is relatively frequent on disturbed

soil along trails and especially on older molehills on the forest floor.

Orthotrichum patens (NT) was first reported from Varna (without details about its location, Stefanoff & Petrov 1962) and from Mt Vitosha (Mickiewicz & al. 1966). In the Uchilishtna Gora Managed Reserve, it occurs sporadically on the bark of oaks and hornbeam.

Syntrichia papillosa (EN) was reported from the following floristic regions: Danubian Plain, Forebalkan, Valley of River Struma, Rhodopi Mts (*Central*) and Mt Strandza (Ganeva 1992; Ganeva & Düll 1999; Natcheva 2007a, b; Ganeva & al. 2008; Papp & al. 2011). By the time of its evaluation for the national *Red List*, only single localities were known in the Valley of River Struma, Rhodopi Mts and Mt Strandza regions and it was assessed as EN. Since then, the species has been found at more sites and its status needs to be re-evaluated.

The study of species diversity of larger fungi in Uchilishtna Gora Managed Reserve is still in its initial stage, as investigations in more than one season are needed to reveal the entire fungal diversity. The presented data of our study suggests that the territory of the reserve is very interesting in respect to fungi and especially to the threatened species of national conservation value. Possibly, some other wood-rotting fungi, indicators of old oak forests, occur in this protected area.

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