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LARGER FUNGI IN THE PIRIN NATIONAL PARK, BULGARIA

Introduction: Pirin Mts situated in the south-western Bulgaria in the middle part of the Rila – Rhodopes massif. The mountain's relief is alpine. Peak Vichren (2941 m a.s.l.) is the highest point of the mountain. The Pirin National Park encompasses the northern, middle and southern parts of the Pirin Mts on the area of 40332 ha. There are two reserves within the borders of the park: Bayvi Dupki – Dzhindzhiritsa (2873 ha) and Yulen (3152 ha). Pirin Mts and Pirin National Park, in particular are characterized by specific and considerable rich floristic diversity, including large number of endemic and relict species. The vegetation cover is dominated by forests (57 % of the area). Coniferous forests prevailing. Pure and mixed *Picea abies*, *Abies alba*, *Pinus sylvestris*, *P. nigra* communities cover more of 90 % of the territory. Typical for the mountain are the forests of *Pinus peuce* (Macedonian pine) and *P. heldreichii* (Bosnian pine) – High oro-Mediterranean pine forests, code 95AO, Natura 2000 habitat. Scrublands of *Pinus mugo* and *Juniperus sibirica* cover large areas in subalpine belt. Beech forests dominated among broadleaf forests in the mountain. All territory of the Pirin National Park is included in the Important Plant Area «Pirin» in the IPAs network in Bulgaria [5, 6].

Data on larger fungi of the park have been reported in 46 scientific papers (20 after 2000). The most important contribution to the knowledge of fungi in the Pirin Mts and in the Pirin National Park, in particular is the paper of Denchev et al. [1]. All published and unpublished information about larger fungi to 2007 was summarized.

The present report includes data on the species diversity and conservation of larger fungi in the Pirin National Park so far. A large part of materials was collected by authors in the framework of Up-

date of Plan for management of Pirin National Park Project.

Material and methods: Mycological field studies were carried out by the tracking method during the period June–October of 2014 mainly in the forests communities on the territory of the park and within the reserves. Author's name of fungal taxa are abbreviated according to Kirk & Ansell [3]. The threat status follows the Red List of fungi in Bulgaria [2].

Results and discussion:

Species diversity of larger fungi

The total number of currently known species of larger fungi from Pirin National Park is 373. Fungi belong to Ascomycota (2 classes, 3 orders, 14 families, 22 genera and 33 species) and to Basidiomycota (2 classes, 13 orders, 50 families, 120 genera and 340 species). Order Agaricales dominated by the number of species (187). The families with highest number of species are: Russulaceae (43), Tricholomataceae (37), Agaricaceae (31) and Cortinariaceae (19). The most species-rich genera are: Russula (31), Cortinarius (19), Mycena (14). During the present investigation in 2014 have been recorded 198 species. Eighty seven of them are reported for the first time for the Pirin National Park. Five species are new for Bulgaria: *Cortinarius caninus* (Fr.) Fr., *C. claricolor* (Fr.) Fr., *Limacella delicata* var. *vinosorubescens* (Furrer – Ziogas) Gminder, *Mycena flos-nivium* Kühner, *Ramaria largenii* Marr & D. E. Stuntz .

The highest fungal diversity was founded in coniferous forests and mainly in mixed spruce forests. The list of all known larger fungi from Bayuvi Dupki – Dzhindzhiritsa Reserve includes 101 species. Seventy three of them were registered during the present study. Forty two are new for the reserve. Thirty two larger fungi were established in Yulen

Reserve in 2014. It is the first report of fungi for this reserve.

Species of conservation significance

In the Pirin National Park are distributed 25 larger fungi of conservation value. All species are included in the Red List of fungi in Bulgaria [2]. They are listed in the following threat categories: Critically Endangered (CR) – 2 species (*Sarcodon leucopus* (Pers.) Maas Geest & Nanf., *Tricholoma colossus* (Fr.) Quél); Endangered (EN) – 13 species (*Auriscalpium vulgare* Gray, *Clitocybe vermicularis* (Fr.) Quél, *Discinia leucoxantha* (Boud.) Gillet, *Chlorophyllum agaricoides* (Czern.) Vellinga, *Clavariadelphus truncatus* (Quél.) Donk, *Guepinia helvelloides* (DC. : Fr.) Fr., *Hydnellum suaveolens* (Scop. : Fr.) P. Karst, *Leucocortinarius bulbiger* (Alb. & Schwein. : Fr.) Singer, *Limacella gutata* (Pers. : Fr.) Konrad & Maubl., *Phylloporis pelletieri* (Lév.) Quél., *Russula amethystina* Quél., *Sparassis crispa* (Wulfen : Fr.) Fr., *Suillus sibiricus* (Singer) Singer); Vulnerable (VU) – 8 species (*Discinia ancilis* (Pers.) Sacc., *Gaeastrum melanocephalum* (Czern.) V. J. Stanek, *G. triplex* Jungh., *Gomphus clavatus* (Pers. : Fr.) Gray, *Helvella atra* J. König. : Fr., *Otidea onotica* (Pers.) Fuckel, *Porphyrellus porphyrosporus* (Fr. & Hök.) E. J. Gilbert, *Urnula craterium* (Scwein. : Fr.) Fr.); Near Threatened (NT) – 2 species (*Morchella elata* Fr., *Phellinus nigrolimitatus* (Romel.) Bourd.

& Galzin. Seventeen species are included also in Red Data Book of R. of Bulgaria [4].

Four species – *Gomphus clavatus*, *Phylloporus pelletieri*, *Suillus sibiricus* and *Tricholoma colossus* are threatened at European level and are listed in the Criterion A(ii) species in the Pirin IPA in Bulgaria [5]. *Suillus sibiricus* is characteristic species for the *Pinus peuce* communities in Bulgaria (Rila Mts and Pirin Mts). This species is object of observation in Pirin National Park in the frame of the National Biodiversity Monitoring System).

Two species – *Phylloporus pelletieri* and *Suillus sibiricus* are listed in the national Biodiversity Act (Appendix 2a).

Eight of larger fungi of conservation value were founded during 2014. Three of them (*Clavariadelphus truncatus*, *Gaeastrum triplex* and *Limacella guttata*) are the first records for Pirin National Park and for all mountain.

Larger fungi of conservation importance have been founded mainly in northern part of the park, including the territory of the reserves.

Conclusion: The presented data suggest the conclusion that the Pirin National Park is characterized by larger fungi diversity and particularly by species of high conservation value.

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Summary. Data on the species diversity and conservation of larger fungi in the Pirin National Park are reported. The total number of currently known species is 373 (33 ascomycetes and 340 basidiomycetes). A large part of materials has been collected in the framework of Update of Plan for management of the Pirin National Park Project. During the field investigations have been recorded 198 fungal species. Eighty seven of them are reported for the first time for the Pirin National Park. Five species are new for Bulgaria. Twenty five

larger fungi are of conservation value – included in Red List of fungi in Bulgaria. Seventeen of them are included also in national Red Data Book. Eight species with conservation value were founded during 2014. Three species are the first records for the park and for all mountain.