A STUDY OF MACROMYCETES IN "MAGLENISHKI RID" EASTERN RHODOPES MTS. I

M. Lacheva
Department of Botany and Agrometeorology, Agricultural University-Plovdiv, Plovdiv, Bulgaria
Correspondence to: Maria Lacheva
E-mail: agaricus@abv.bg

ABSTRACT

The data on the species composition, distribution and ecological-trophic structure of macromycetes in Maglenishki Rid (Eastern Rhodopes Mts) are published for the first time. Eight species includes in the Red List of fungi in Bulgaria: Amanita caesarea (Scop. : Fr.) Pers., Ganoderma pfeifferi Bres., Grifola frondosa (Discks. : Fr.) Gray, Hericium coralloides (Scop. : Fr.) S.F. Gray, Hygrophorus russula (Schaeff. : Fr.) Quél., Lenzites warnieri Durieu & Mont., Russula solaris Ferd. & Winge. and Strobilomyces strobilaceus (Scop. : Fr.) Berk.

Keywords: conservation value, ecological-trophic structure, macromycetes**,** rare taxa, species diversity

Introduction

The special interest to the macromycetes in Maglenishki Rid (Eastern Rodopes Mts.) is connected with the biodiversity in the region. Particular data for the distribution of the fungi hasn't been designated in the specialized literature. The number of the described macromycetes in the Rodopes Mts is 674. Data on the species diversity and distribution is published in 14 articles (1).

The purpose of this study is to examine the species composition, distribution and the conservation status of the macromycetes in the region. The collected scientific information will be used for analysis and planning activities on the conservation and management of the biodiversity in a secure future territory.

Materials and methods

The mycological studies were conducted in 2006-2008 in the tracking method with transitions mainly in the most widespread local plant communities on the northern slopes of the Maglenishki Rid:

(1) Natural forest of *Quercus delechampii* Ten s.str., at the foot of the top "Portata".

(2) Natural forest of *Fagus sylvatica* L., at the foot of the top "Koja Ele";

(3) In deciduous forest of *Quercus delechampii* Ten s.str., *Fagus sylvatica* L., around the "Yuruklenska river", above the village of Gorni Yurutsi.

(4) Deciduous forest of *Fagus sylvatica* L. and *Quercus delechampii* Ten s.str., around the area "Raven's rocks", above the village of Gorni Yurutsi.

(5) Deciduous forest of *Fagus sylvatica* L., *Quercus delechampii* Ten s.str, *Pinus sylvestris* L. and *Alnus glutinosa* (L.) Gaertner, between the villages of Strajets and Gorni Yurutsi.

The definition of the taxa was carried out according to (9, 10, 11, 12, 13, 6, 8) and the ecology-trophic structure were carried out after direct observations and based on literature data (2, 4). The authors of the fungous taxa are given in (7) and the plants taxa in (3).

Results and Discussion

Species composition, distribution and the ecological-trophic structure of the current macromycetes are given in Table 1.

As a result of the field work 61 macromycetes were registered, relating to 2 classes and 43 genera: 60 species from the class Basidiomycetes and only 1 taxa from the class Myxomycetes, division Myxomycota. The digital indicators of the number of the genus and the species do not disclose the true concept for the species diversity of the macromycetes in the studied territory, as the rainfall during the research was not enough. Under such conditions the wood-destroying fungi develop better. This kind of fungi depends less on the rainfall, and most of them have perennial fruit bodies.

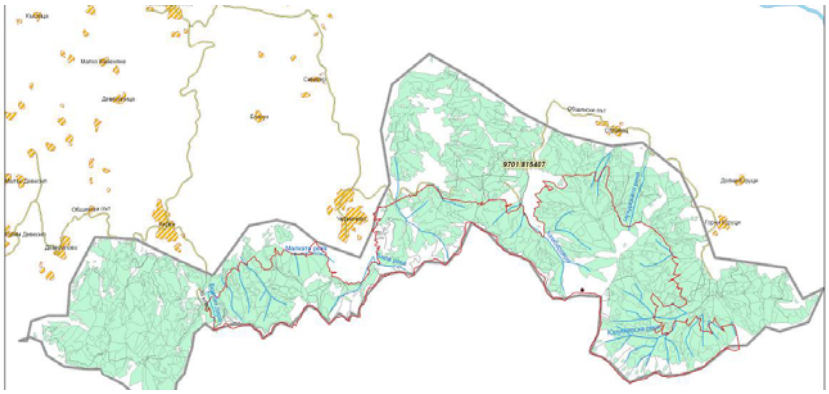

Fig. 1. Map of the studying region

During field studies the old beech forests in the in accessible parts of the deep gullies and on the high parts of the massif near the Bulgarian-Greek border. It is in these woods where was observed the greatest destruction of trees by *Fomes fomentarius* (L. : Fr.) Fr. In the coniferous culture with heterogeneous composition, including *Pinus sylvestris* L. and *P. nigra* Arn., *Pseudotsuga menziesii* (Mirbel) Franco, *Cedrus antlantica* (Endl.) Carriere and *Picea abies* (L.) Karsten, the following species were found: *Agaricus silvicola (Vitt.) Sacc., Inocybe geophylla* (Sow. : Fr.) Kummer, *R. delica* Fr., and *Stropharia aeruginosa* (Curt. : Fr.) Quél.

Regarding their ecological characteristics and the substrate specificity, the current macromycetes in the studied territory, are distributed in 6 ecological-trophic groups: saprotrophs in litter (St) – 3 species; humus saprotrophs (Hu) – 12 species; saprotrophs on wood (LeS) – 33 species; saprotrophs on fallen leaves of deciduous trees (Fd) – 3 species; mycosymbiotrophs (Mr) – 6 species and parasites on arboreal plants (LeP) – 14 species (Table 1). As regards the abundance of species in forest communities, the dominants are the saprotrophs on wood, parasites on arboreal plants and humus saprotrophs.

The lack of preliminary studies of the macromycetes in the region.and the dry and hot summer of 2007, fail to make objective analysis, and even conclusions about the overall species composition, distribution, conservation status and the numbers of the economic valuable species. To carry out detailed monitoring is necessary long time, because the emergence and development of the fruit bodies depends on the weather conditions.

Largely the studied territory is covered with deciduous oak and beech forests and some isolated areas are covered with coniferous culture. Considering the type of the habitations, as possible for the region could be pointed many important economic edible species: *Agaricus silvaticus* Schaeff., *A. silvicola* (Vitt.) Sacc., *Amanita rubescens* (Pers. : Fr.), *Boletus edulis* Bull.: Fr., *B. pinophilus* Pilát. & Dermek, *Cantharellus cibarius* Fr., *Lactarius piperatus* (L. : Fr.) Pers., *L. volemus* (Fr.) Fr., *L. deliciosus* (L.) S.F. Gray, *Macrolepiota rachodes* (Vitt.) Sing., *Russula vesca* Fr., *R. virescens* (Schaeff.) Fr., *Lepista nebularis* (Batsch : Fr.) Harmaja, *Pleurotus ostreatus* (Fr.) Kummer, *Suillus luteus* (L. : Fr.) S.F. Gray, *Xerocomus badius* (Fr.) Kuhner. The species *Boletus edulis*, *B. pinophilus* and *Cantharellus cibarius* are listed as endangered in the Red List of fungi in some National parks in the country. In the deciduous (oak and beech) forests are common and with a lot of fruit bodies the following species: *Fomes fomentarius*, *Macrolepiota procera*, *Oudemansiella radicata*, *Russula cyanoxantha, Trametes versicolor*, *T. hirsuta*. With great abundance was *Trametes versicolor*. The most common parasite on the beech trees was *Fomes fomentarius*.

The macromycetes, because of their uncontrolled collection, are one of the most endangered groups, not only on the territory of the Maglenishki Rid, but also in the country.

During the research in the area were found eight species including to the European Directives and to the Red List of the macromycetes in Bulgaria (14, 15, 16, 5). The rare species were designed with R (category rare species).

The presented data on macromycetes occurring in Maglenishki Rid suggest the conclusion that this region is extremely interesting as an object of mycological study so far.

TABLE 1

Species composition, distribution and ecological-trophic structure of macromycetes

Ecological-trophic groups	Таксони	Находище				
		1	2	3	4	5
Hu	*Agaricus silvicola (Vitt.) Sacc.*	+	+	+	_	+
Hu	(R) *Amanita caesarea* (Scop. : Fr.) Pers.	_	+	_	_	+
LeS, LeP	*Armillaria mellea* (Vahl. : Fr.) Kummer	+	+	+	+	_
Hu	*Bovista plumbea* Pers.	_	_	_	_	+
LeS	*Clitocybe brumalis* (Fr. : Fr.) Quél.	+	+	+	+	_
St, Hu	*Collybia dryophila* (Bull. : Fr.) Kummer	+	+	+	+	+
LeS	*C. fusipes* (Bull. : Fr) Quel.	+	+	_	_	+
St, Hu	*Coprinus plicatilis* (Curt. : Fr.) Fr.	_	_	+	_	_
LeS	*Crepidotus mollis* (Schaeff. : Fr.) Kummer	+	+	+	+	_
LeS, LeP	*Fistulina hepatica* (Schaeff. : Fr.) With.	_	_	+	_	+
LeP	*Fomes fomentarius* (L. : Fr.) Fr.	+	+	+	+	+
LeP	*Ganoderma lucidum* (Curt. : Fr.) Karst.	_	_	+	+	_
LeP	(R) *G. pfeifferi* Bres.	_	+	_	_	_
LeP	(R) *Grifola frondosa* (Discks. : Fr.) Gray	+	+	+	+	+
LeP	(R) *Hericium coralloides* (Scop.:Fr.)S.F. Gray	_	+	+	_	_
Hu	(R) *Hygrophorus russula* (Schaeff. : Fr.) Quél.	+	+	_	_	_
LeS	*Hymenochaete rubiginosa* (Schrad. :Fr.) Lev.	+	+	+	+	+
LeS	*Hypholoma fasciculare* (Huds. : Fr.) Karst.	_	_	+	_	+
Mr	*Inocybe geophylla* (Sow. : Fr.) Kummer	+	+	_	+	+
LeP	*Inonotus radiatus* (Fr.) Karst.	+	+	+	_	_
LeP	*I. hispidus* (Bull. : Fr.) Karst.	+	+	_	+	_
Hu	*Lepiota clypeolaria* (Bull. : Fr.) Kummer	_	+	+	_	+
LeP	*Lycogala epidendrum* (L.) Fr.	+	+	+	+	+
LeP	(R) *Lenzites warnieri* Durieu & Mont.	_	+	_	_	_
St, Hu	*Lepista flaccida* (Sow. : Fr.) Pat.	_	_	_	+	+
Hu	*Macrolepiota procera* (Scop. : Fr.) Sing.	_	+	+	+	_
LeS, Fd	*Marasmiellus ramealis* (Bull. : Fr.) Sing.	+	+	+	+	+
LeS, Fd	*Marasmius androsaceus* (L.) Fr.	+	+	+	_	_
LeS, Fd	*M. rotula* (Scop. : Fr.) Fr.	+	+	+	+	+
LeS	*Mycena epipterygia* (Scop. : Fr.)S.F. Gray	+	+	_	+	_
LeS	*M. galericulata* (Scop. : Fr.) Quél.	_	+	+	_	_
St	*M. pura* (Pers. : Fr.) Kummer	_	_	+	+	+
LeS	*Neobulgaria pura* (Fr.) Petrak	+	+	_	_	_
LeS	*Oudemansiella radicata* (Relhan : Fr.) Sing.	+	+	_	+	_
LeS	*Paxillus atrotomentosus* (Batsch.) Fr.	+	+	_	_	+
LeS	*Pholiota flammans* (Fr. : Fr) Kummer	+	+	+	+	_
LeS, LeP	*Pleurotus cornucopiae* Paul : Fr.	+	+	_	_	_
LeS	*P. atromarginatus* (Sing.) Kuthner	_	+	_	_	_
LeS	*Polyporus coronatus* Rostk.	+	+	+	_	_
LeS	*P. varius* (Pers. : Fr.) Fr.	+	+	_	+	+
LeS	*P. arcularius* Batsch. : Fr.	+	+	_	+	_
LeS	*Pycnoporus cinnabarinus* (Jacq. : Fr.) Karst.	_	+	+	_	_
Mr	*Russula xerampelina* (Schaeff.) Fr.	+	+	+	_	_
Mr	*R. cyanoxantha* (Schaeff.) Fr.	+	+	_	+	+
Mr	(R) *R. solaris* Ferd. & Winge.	_	+	_	_	_
Mr	*R. delica* Fr.	+	+	+	_	+
Mr	*R. foetens* (Pers. : Fr.) Fr.	+	+	_	_	_
LeS	*Schizophyllum commune* Fr.	+	+	+	+	+
LeS	*Stereum hirsutum* (Willd. : Fr.) S.F. Gray	+	+	+	+	+
LeS	*S. gausapatum* Fr.	+	+	+	+	+
LeS	*S. rugosum* (Pers.)	+	+	+	+	+
LeS	(R)*Strobilomyces strobilaceus* (Scop.:Fr.)Berk	+	+	+	_	_
	Таксони	1	2	3	4	5

LeS	***Stropharia aeruginosa (*Curt. : Fr.) Quél.**	+	_	+	+	+
LeS	***Trametes versicolor* (Fr.) Pil.**	+	+	+	+	+
LeS	***T. suaveolens* (Fr.) Fr.**	+	+	_	_	_
LeS	***T. hirsuta* (Wulf. : Fr.) Pil.**	+	+	+	+	+
Hu	***Tricholoma flavovirens* (Pers. : Fr.) Lundell**	_	_	_	+	+
Hu	***T. imbricatum* (Fr. : Fr.) Kummer**	_	_	+	+	+
LeS	***Tyromyces lacteus* (Fr.) Murrill**	+	+	_	+	_
LeS	***Tubaria* furfuracea (Pers. : Fr.) Gill.**	_	+	+	+	+
Hu	***Xerula radicata* (Relh. :Fr.) Dorfelt.**	+	+	+	_	_

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