



A case study on wood-decaying macrofungi in the Southwestern slopes of Vasilyovska Mountain, Forebalkan, Bulgaria

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Abstract

This study was performed based on specimens of macrofungi collected on field trips to the region between 2007 and 2011. The aim of this study was to determinate the wood-decaying macrofungi of Vasilyovska mountain, to enrich the information about fungal diversity in the Forebalkan floristic region, and make contribution to Bulgarian mycota. The information upon species composition and distribution of wood-decaying macrofungi in the Vasilyovska mountain were published for the first time including the second records of *Armillaria ostoyae*, *Pholiota lucifera* and *Xeromphalina caudicinalis* in the country. A list of 110 species belonging to *Pezizomycota* and *Agaricomycota* has been compiled which 75 species were reported for the first time from Forebalkan. Four species includes in the Red List of fungi in Bulgaria: *Fomitopsis rosea* (Alb. & Schwein. : Fr.) P. Karst., *Hericium coralloides* (Scop. : Fr.) Pers., *H. erinaceus* (Bull. : Fr.) Pers., and *Lenzites warnieri* Durieu & Mont.

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Introduction

The Vasilyovska mountain is situated in Northern Bulgaria, Central Forebalkan (Bondev, 2002). It falls within the temperate-continental climatic region (Velev, 2002). According to the physical and geographical characteristics, the mountain is situated within the Stara Planina (Balkan) region (Georgiev, 1985; Yordanova *et al.*, 2002). The highest point in the mountain is peak Vasilyov (1490 m). Composition of plant communities consists of woody, shrubbery and herbaceous species. The forest area is dominated by *Abies alba*, *Carpinus orientalis*, *Fagus moesiaca*, *F. sylvatica*, *Picea abies*, *Pinus sylvestris*, *Quercus cerris*, *Q. frainetto*, *Q. pubescens*, etc. Deciduous forests interspersed with *Acer spp.*, *Fraxinus spp.*, *Tilia spp.*, etc. Typical representatives of the shrub species are *Crataegus monogyna*, *Prunus spinosa*, *Rosa canina*, *Sambucus nigra*, etc. Moreover the forest is recognized well by *Ostrya carpinifolia* and isolated *Pinus nigra*, etc. (Bondev, 1991).

Mt Vasilyovska is very important for nature conservation. It is part of the European ecological network NATURA 2000 (BG0002109 Vasilyovska mountain). The region is Protected area of the Birds Directive, which protected area of the Habitats Directive.

A list of lignicolous fungi from Bulgaria has been published by Stoichev (1990). The macrofungi, including wood-decaying species of Forebalkan has been poorly studied. There have been only sporadic records of single species from neighboring areas, Central Balkan mountain and Central Balkan National Park (Stoichev, 1981, 1982, 1983, 1987, 1995; Stoichev and Dimcheva, 1982, 1984, 1987; Vanev and Reid, 1986; Dimcheva and Gyosheva, 1993). Briefly information for fungal diversity of the Central Balkan National Park has been presented by Fakirova *et al.* (2000, 2002), but there is no detailed mycological study of the wood-decaying species of the Forebalkan.

The macrofungi of Mt Vasilyovska are seldom recognized. Because of the ecological properties of the mountain and data scarcity, especially in respect of wood-decaying species, it was decided to carry out a detailed study to determine the occurrence and distribution of these organisms in the Mt Vasilyovska. The aim of this study was to determinate the wood-decaying macrofungi of Mt Vasilyovska and make contribution to Bulgarian mycota as a whole.

Materials and Methods

This study was performed based on macrofungi materials collected periodically from 28 localities of Vassiliovska mountain in autumn and summer between 2007 and 2011.

The morphological properties and ecological conditions of the specimens were recorded in the field, and samples were taken to the laboratory for microscopical examination and the preparation of herbarium voucher specimens. Macroscopic and microscopic investigations and micro-chemical reactions were carried out. Identification of the specimens was performed according to Phillips (1981), Breitenbach and Kränzlin (1984-1991), Michael *et al.* (1983-1988), Moser (1983), Ellis and Ellis (1990), Hansen and Knudsen (1992-2000), Dähncke (1993), Gilbertson and Ryvarden (1993, 1994), and Wald *et al.* (2004).

The systematics of the taxa are in accordance with Kirk *et al.* (2008), Denchev and Assyov (2010), and Index fungorum (www.speciesfungorum.org: accessed 3 May 2014), and they are listed in alphabetical order. All taxa were listed together with their distribution, habitat, locality, and collection date. Specimens were collected by the author, unless otherwise stated. Voucher specimens were deposited in the Agricultural University (SOA) in Plovdiv.

Collection localities

The study area consists of one county (Teteven municipality with Teteven town) and six rural districts. These are the villages of Babintsi, Glogovo, Glojene, Gradejnitsa, Ribaritsa, and Vasilyovo.

Land of Babintsi village

1. Babintsi village, beech community around the village, 800-1000 m alt.
2. Babintsi village, beech and spruce community under the peak Treskavets, 900-1000 m alt.
3. Babintsi village, beech and spruce community under the peak Cherven, 850-1000 m alt.
4. Babintsi village, beech community, Asanovoto locality, under the peak Ostrich, 800 m alt.

Land of Glogovo village

5. Glogovo village, mixed forest of *Carpinus*, *Fagus*, *Fraxinus*, *Quercus*, and artificial cultures of *Pinus* and *Populus* around the village, 500-600 m alt.
6. Glogovo village, Krusta locality, beech community, 500 m alt.
7. Glogovo village, Damenitsa locality, broadleaved forests of *Fagus*, *Carpinus*, *Quercus*, 500 m alt.
8. Glogovo village, Gramatnika neighborhood, mixed forest of *Fagus*, *Carpinus*, *Quercus*, 500 m alt.

Land of Glojene villages

9. Glojene village, Stefanets locality, mixed forest of *Carpinus*, *Fagus*, *Fraxinus*, *Quercus*, and cultures of *Pinus nigra*, *P. sylvestris*, and *Populus nigra*, 450 m alt.
10. Glojene village, Nyagolova Voda locality, mixed forests with prevalence of *Carpinus betulus*, 500 m alt.
11. Glojene village, Vodna Pesht locality, broadleaved forests with prevalence of *Carpinus betulus* and *Quercus spp.*, 500 m alt.

12. Glojene village, Tipchov Zab locality, broadleaved forests with prevalence of *Quercus spp.*, 500 m alt.

13. Glojene village, Vara waterfall, mixed forest of *Fagus*, *Carpinus*, *Quercus*, and cultures of *Pinus nigra* *Betula pendula* and *Betula pendula*, 500 m alt.

14. Glojene village, Vrua locality, beech community, 700 m alt.

15. Glojene village, Reventa locality, beech community, 700 m alt.

Land of Gradejnitsa village

16. Gradejnitsa villages, broadleaved forests with prevalence of *Carpinus betulus* and *Quercus spp.*, around the village, 500-600 m alt.

17. Gradejnitsa villages, Balyov Rat locality, broad-leaved forests with prevalence of *Quercus spp.*, 450 m alt.

18. Gradejnitsa villages, Rushova Dupka locality, broad-leaved forests with dominated of *Quercus spp.*, 450 m alt.

19. Gradejnitsa villages, Djamijska neighborhood, broad-leaved forests with dominated of *Quercus spp.*, and *Carpinus orientalis*, 400 m alt.

Land of Ribaritsa village

20. Ribaritsa village, beech community around the village, 600-700 m alt.

21. Ribaritsa village, beech community and *Ostrya carpinifolia* community, in the valley of Zavodna River, roadside from Ribaritsa village to Vejen Chalet, 750 m alt.

22. Ribaritsa village, Ostar Kamak locality, beech community and *Ostrya carpinifolia* community, along the Beli Vit River, 600-700 m alt.

Land of Vasilyovo village

23. Vasilyovo village, beech and pine community around the village, 970-1000 m alt.

24. Vasilyovo village, beech community under saddle Bogoe, and pine community above saddle Bogoe, 1200 m alt.

25. Vasilyovo village, beech and spruce community under Vasilyov Chalet, 1350 m alt.

26. Vasilyovo village, beech and spruce community under the peak Vasilyov, 1200 m alt.

27. Vasilyovo village, beech community near preserved area Cheren Rat, 1250 m alt.

28. Vasilyovo village, in community of *Pinus sylvestris* around the village, 970-1000 m alt.

Voucher specimens were deposited at SOA.

Results and Discussion

Since the Forebalkan has a temperate-continental climate, wood-decaying fungi can be found throughout the year. Coniferous broad-leaved forests cover large areas of the mountain, providing good growing conditions and substrate for wood rotting fungi. Trees growing in sheltered valleys and near streams are particularly suitable habitats for these fungi.

As a result of the present study, 110 species of wood-decaying fungi belonging to 28 families of the *Pezizomycota* and *Agaricomycota* were identified. Of these, 75 species are reported for the first time from Stara Planina Mts. Nineteen were recovered from coniferous trees, 73 from broadleaved trees, and 6 from either broad-leaved or coniferous trees and one from litter. A total of 12 species were identified as primary parasites.

Particularly rare and unusual findings were: *Antrodia xantha*, *Baeospora myosura*, *Crucibulum laeve*, *Inonotus hastifer*, *I. nodulosus*, *I. rheades*, *Phellinus punctatus*, *Ph. torulosus*, *Xylaria hypoxylon*, *X. polymorpha*. Conversely, *Armillaria mellea*, *Coriolopsis gallica*, *Dichomitus campestris*, *Fomes fomentarius*, *Fomitopsis pinicola*, *Hypholoma fasciculare*, *Phlebia tremellosa*, *Schizophyllum commune*, *Trametes hirsuta*, *Trichaptum abietinum*, were the most common species. In beech communities common following species are *Fomes fomentarius*, *Pleurotus ostreatus*, *Stereum hirsutum*, *Trametes hirsuta*, *T. versicolor*. In oak forests the most

prevalent species are *Daedaleopsis tricolor*, *Phellinus igniarius*, *Hapalopilus nidulans*, *Lenzites betulina*, and in pine cultures are often found *Fomitopsis pinicola* and *Postia stiptica* are often found.

The species *Pholiota lucifera* and *Armillaria ostoyae* reported for the second time in the country. Four rare species found during this study are included in the Red List of fungi in Bulgaria (Gyosheva *et al.*, 2006), and Red Data Book of the Republic of Bulgaria (Peev *et al.*, 2011) on the territory of Mt Vasilyovska, namely *Fomitopsis rosea*, *Hericium coralloides*, *H. erinaceus* and *Lenzites warnieri*.

List of species

(* new to Forebalkan, CV – conservation value)

Pezizomycota Caval.-Sm.

Helotiales Nannf

Helotiaceae Rehm.

**Bisporella citrina* (Batsch) Korf and S.E. Carp.: On beech branch, locality 1, 12.08.2009.

Pezizales J. Schröt.

Discinaceae Benedix

**Discina ancilis* (Pers.) Sacc.: On fir stump, locality 2, 31.09.2010.

Pyronemataceae Corda

**Humaria hemisphaerica* (F.H. Wigg.) Fuckel: On fir stump, locality 2 & 3, 31.09.2010.

Xylariales Nannf.

Xylariaceae Tul. and C. Tul.

**Hypoxylon fragiforme* (Pers.) J. Kickx: On beech stump, locality 4, 31.09.2010.

**Xylaria hypoxylon* (L.) Grev.: On fir stump, locality 3, 31.09.2010.

**Xylaria polymorpha* (Pers.) Grev.: On beech stump, locality 4, 12.08.2009, 31.09.2010.

Agaricomycota Whittaker ex Moore.

Agaricales Underw.

Agaricaceae Chevall.

**Crucibulum laeve* (Huds. : Pers.) Kambly: On buried wood of *Picea abies*, locality 2 & 3, 31.09.2010; On buried wood of *Quercus*, locality 13, 28.10.2008; On buried wood of *Carpinus betulus*, localities 10 & 16, 27.10.2010.

**Lycoperdon pyriforme* Schaeff.: On fir stump, locality 26, 22.10.2011; On rotten fir trunk, locality 13, 11.10.2007; locality 25, 19.09.2008.

Fistulinaceae Lotsy

Fistulina hepatica (Schaeff.: Fr.) With.: Parasitic on trunks and branches of *Quercus spp.*, locality 7, 27.10.2008; locality 12, 29.10.2008.

Inocybaceae Jülich

**Crepidotus variabilis* (Pers.: Fr.) P. Kumm.: On dead branches of *Salix spp.*, locality 21, 23.10.2011; On dead twigs of *Tillia spp.*, locality 22, 23.10.2011.

Marasmiaceae Roze ex Kühner

**Baeospora myosura* (Fr. : Fr.) Singer: On pine cones, locality 5, 26.09.2009; locality 20, 23.10.2011.

**Setulipes androsaceus* (L. : Fr.) Antonín: On dead twigs of conifers, collected once, localities 26, 19.09.2008.

**Marasmius rotula* (Scop. : Fr.) Fr.: On beech branch, locality 20, 22.09.2007; locality 23 & 27, 30.09.2010; locality 24, 21.10.2011.

**Mycenitis alliaceus* (Jacq. : Fr.) Earle: On dead branches of *Fagus*, collected once, locality 24, 21.10.2011.

**Omphalotus olearius* (DC. : Fr.) Singer: On dead stumps of *Quercus*, collected once, locality 9, 12 & 13, 28.10.2008.

Mycenaceae Overeem

**Mycena crocata* (Schrad. : Fr.) P. Kumm.: On dead twigs of fir trees, localities 24 & 26, 22.10.2011.

**Mycena pura* (Pers. : Fr.) P. Kumm.: On decaying conifer stumps, localities 3, 12.08.2009;

On fir branch, locality 9, 28.10.2008; locality 5 & 9, 27.09.2009.

**Xeromphalina caudicinalis* (Fr.) Kühner & Maire: In fir forest, on needle litter, collected once, locality 2, 31.09.2010.

Physalacriaceae Corner

**Armillaria mellea* (Vahl : Fr.) P. Kumm.: On fir stump, locality 5, 26.09.2009; On fir stump, locality 4, 20.10.2009; On wood of conifer and broadleaved trees, very common, localities 21, 22.09.2007; 24, 25 & 27, 22.10.2011.

**Armillaria ostoyae* (Romagn.) Herink: On pine stumps or trunks, collected once, locality 24, 21.10.2011.

**Armillaria socialis* (D.C. : Fr.) Fayod: On dead wood of broadleaved, common, localities 9 & 12, 26.10.2010; 17 & 18, 27.10.2010.

**Flammulina velutipes* (Curtis) Singer: On dead wood of broadleaved trees, collected once, locality 15, 29.10.2008.

**Xerula pudens* (Pers.) Singer: On buried *Quercus* wood, locality 11, 27.09.2009; locality 17, 26.09.2009.

**Xerula radicata* (Relhan : Fr.) Dörfelt: On fir root, locality 2, 12.08.2009; On or near dead stumps of *Fagus*, common, localities 14 & 15, 11.10.2007; localities 5 & 6, 18.09.2011.

Pleurotaceae Kühner

Pleurotus ostreatus (Jacq. : Fr.) P. Kumm.: On stumps of *Fagus sylvatica*, locality 8, 26.09.2009; On beech stump, localities 13, 14 & 15, 11.10.2007; On stumps of *Salix* woods, localities 9, 11, 29.10.2008; localities 21, 22 & 23, 23.10.2011; On stumps of *Fagus moesiaca*, localities 23, 24 & 27, 18.09.2008.

Pleurotus cornucopiae (Paulet) Rolland: On stumps of *Fagus* wood, locality 20, 23, 23.10.2011.

Pluteaceae Kotl. and Pouzar

**Pluteus cervinus* (Schaeff.) P. Kumm.: On decaying *Fagus* wood, common, locality 8, 20.09.2007; On decaying *Quercus* wood, locality

8, 26.09.2009; On decaying *Carpinus* wood, locality 8, 26.09.2009; On decaying *Quercus* wood, locality 12, 26.10.2010.

**Pluteus atromarginatus* (Konrad) Kühner: On fir stump, locality 9, 27.09.2009; On dead willow stumps, locality 16, 26.09.2009.

**Pluteus leoninus* (Schaeff.: Fr.) P. Kumm.: One collected from a dead stump of *Fagus*, locality 15, 26.10.2010.

**Volvariella bombycina* (Schaeff. : Fr.) Singer: On decaying *Fagus* wood, June and July 1998, localities 4 & 36; On decaying broadleaved wood, locality 14, 11.10.2007; locality 15, 26.10.2010.

Psathyrellaceae Vilgalys, Moncalvo and Redhead

**Coprinellus disseminatus* (Pers. : Fr.) J.E. Lange: On beech stump, locality 2, 31.09.2010.

**Coprinellus micaceus* (Bull. : Fr.) Vilgalys, Hopple and Jacq.Johnson: On rotten beech trunk, locality 4, 31.09.2010.

**Psathyrella candolleana* (Fr. : Fr.) Maire: On dead willow stumps, locality 21, 22.09.2007; On wood of poplar, locality 5, 26.09.2009; On wood of deciduous trees, in deciduous forest, locality 11, 29.10.2008.

Schizophyllaceae Quéf.

Schizophyllum commune Fr.: On beech stump, very common, localities 1 & 4, 30.09.2010; On stumps and trunks of conifer and broadleaved trees, very common, localities 5, 6, 7 & 8, 20.09.2007; 26.09.2009; 18.09.2011.

Strophariaceae Singer and A.H. Sm.

**Agrocybe cylindracea* (DC.) Maire: Parasitic on willows, locality 22, 23.10.2011.

**Hypholoma fasciculare* (Huds. : Fr.) P. Kumm.: On spruce stump, locality 2, 30.09.2010; On spruce stump, locality 3, 30.09.2010; On rotten fir root, locality 11, 10.10.2007; On fir stump, locality 9, 28.10.2008; On spruce stump, locality 26, 22.10.2011; Very common on stumps of conifer and broad-leaved trees, localities 9, 10,

11, 12 & 13, 10.10.2007; 28.10, 2008; 27.09.2009; 26.10.2010.

**Hypholoma capnoides* (Fr. : Fr.) P. Kumm.: On conifer stumps, localities 1, 2 & 4, 12.08.2009; 30.09.2010.

**Hypholoma sublateritium* (Schaeff. : Fr.) P. Kumm.: Less common, on broadleaved stumps, locality 14, 28.10.2008, localities 17 & 18, 27.10.2010.

**Pholliota populnea* (Pers. : Fr.) Kuyper & Tjall.-Beuk.: On dead stumps of *Fagus moesiaca*, locality 24, 19.09.2008; On dead stumps of *Quercus spp.*, locality 19, 26.09.2009; On dead stumps of *Populus spp.*, locality 9, 27.09.2009.

**Pholliota flammans* (Batsch : Fr.) P. Kumm.: On dead stumps of conifers, localities 2 & 3, 31.09.2010.

**Pholliota squarrosa* (Weigel : Fr.) P. Kumm.: On stumps of *Pinus sylvestris*, locality 24, 19.09.2008.

**Pholliota lucifera* (Lasch) Quéf.: On fir rot, collected once, locality 20, 23.10.2011.

Tricholomataceae R. Heim ex Pouzar

**Tricholomopsis rutilans* (Schaeff. Fr.) Singer: On stumps of conifers, collected once, localities 24 & 25, 19.09.2008.

Auriculariales J. Schröt.

Auriculariaceae Fr.

Exidia glandulosa (Bull. : Fr.) Fr.: On dead wood of broad-leaved trees, collected once, locality 9, 27.09.2009.

Dacrymycetales Lindau

Dacrymycetaceae J. Schröt

**Calocera cornea* (Batsch : Fr.) Fr.: On beech branch, locality 1, 30.09.2010.

**Calocera viscosa* (Pers. : Fr.) Fr.: On fir branch, locality 5, 20.09.2007; On rotten wood of *Abies alba*, very common, localities 3, 30.09.2010.

**Dacrymyces stillatus* Nees : Fr.: On rotten fir wood, locality 24, 21.10.2011.

Gloeophyllales Thorn

Gloeophyllaceae Jülich

Gloeophyllum sepiarium (Wulfen : Fr.) P. Karst.: On fallen spruce trunk, locality 3, 31.09.2010; On dead wood of *Picea abies*, locality 25, 22.10.2011; Very common on stumps of *Picea abies*, locality 26, 22.10.2011.

Hymenochaetales Oberw.

Hymenochaetaceae Imazeki and Toki

Hymenochaete rubiginosa (Dicks.: Fr.) Lév.: On fallen oak trunk, locality 13, 27.09.2009; On fallen oak trunk, locality 17, 26.09.2009.

Inonotus cuticularis (Bull.: Fr.) P. Karst.: On the base of the stem of *Quercus cerris*, common, locality 17, 27.10.2010; On the base of the stem of *Quercus cerris*, common, locality 8, 26.09.2009.

**Inonotus hastifer* Pouzar: On twig of *Fagus sylvatica*, not common, locality 4, 12.08.2009.

Inonotus hispidus (Bull. : Fr.) P. Karst.: Parasitic on trunks and branches *Fagus sylvatica*, common, locality 1, 12.08.2009; On the stem of *Fraxinus spp.*, locality 5, 26.09.2009; On the stem of *Fraxinus spp.*, locality 9, 27.09.2009.

**Inonotus nodulosus* (Fr.) P. Karst.: On fallen trunk of *Fagus sylvatica*, collected once, locality 4, 12.08.2009.

**Inonotus obliquus* (Ach. ex Pers. : Fr.) Pilát: On the stem of *Betula pendula*, not common, locality 13, 28.10.2008; 27.09.2009.

**Inonotus rheades* (Pers. : Fr.) P. Karst.: On fir stump, collected once, locality 2, 30.09.2010.

**Phellinus ferruginosus* (Schrad. : Fr.) Pat.: On fallen oak trunk, not common, locality 16, 21.09.2007; On fallen oak trunk, not common, locality 18, 27.10.2010.

**Phellinus hartigii* (Allesch. & Schnabl) Pat.: On fallen fir trunk, collected once, locality 2, 30.09.2010.

Phellinus igniarius (L.: Fr.) Quél.: On the stem of *Quercus spp.*, very common, locality 17, 27.10.2010.

Phellinus pomaceus (Pers.) Maire: On fallen trunk of *Fagus sylvatica*, collected once, locality 2, 30.09.2010.

**Phellinus punctatus* (P.Karst.) Pilát: On the stem of *Betula pendula*, collected once, locality 5, 27.10.2008.

Phellinus torulosus (Pers. : Fr.) Bourdot & Galzin: On the stem of *Fagus sylvatica*, locality 1, 12.08.2009; On the stem of *Fagus sylvatica*, locality 15, 29.10.2008.

**Phylloporia ribis* (Schumach.: Fr.) Ryvarden.: On the stem of *Fagus sylvatica*, locality 22, 22.09.2007; 23.10.2011; On the stem of *Fagus sylvatica*, locality 2, 30.09.2010.

Polyporales Gäum.

Fomitopsidaceae Jülich

**Antrodia xantha* (Fr. : Fr.) Ryvarden: On dead wood of conifers, not common, locality 3, 12.08.2009.

**Fomitopsis pinicola* (Sw.) P. Karst.: On fallen fir trunk, locality 5, 20.09.2007; On fir stump, locality 9, 27.09.2009; On fallen fir trunk, locality 24, 19.09.2008; On fallen fir trunk, locality 28, 21.10.2011.

*CV *Fomitopsis rosea* (Alb. & Schwein. : Fr.) P. Karst.: A rare species collected from fallen trunk and branches of *Picea abies*, four fruiting bodies, locality 2, 30.09.2010.

**Ischnoderma benzoinum* (Wahlenb. : Fr.) P. Karst.: On spruce stump, locality 3, 12.08.2009; On fir stump, locality 25, 22.10.2011.

Laetiporus sulphureus (Bull. : Fr.) Murrill: On stump of *Prunus cerasifera*, locality 12, 11.10.2007; On stump of *Quercus spp.*, locality 11, 10.10.2007; On stump of *Salix spp.*, locality 21, 13.10.2011.

**Postia caesia* (Schrad. : Fr.) P. Karst.: On fallen fir and spruce trunk, locality 2 & 3, 30.09.2010.

**Postia stiptica* (Pers. : Fr.) Jülich: On fir stump, locality 3, 12.08.2009; On fallen fir trunk, locality 25, 22.10.2011.

Ganodermataceae Donk

**Ganoderma adspersum* (Schulzer) Donk: Parasitic on *Quercus* and *Fagus*, localities 5, 7 & 8, 20.09.2007; 26.09.2009.

**Ganoderma applanatum* (Pers.) Pat.: Very common on stumps of *Quercus spp.* and *Fagus spp.*, localities 13, 14 & 15, 11.10.2007; 26.10.2010; On willow, locality 21, 23.10.2011.

Ganoderma lucidum (Curtis : Fr.) P. Karst.: On roots of broad-leaved trees, common, localities 7 & 8, 22.09.2007; localities 17, 18 & 19, 27.10.2010; localities 12, 26.10.2010.

**Ganoderma resinaceum* Boud.: Parasitic on *Quercus spp.* and other hard woods, locality 5, 20.09.2007; Parasitic on *Quercus* and other hard woods, locality 19, 26.09.2009; Parasitic on *Quercus* and other hard woods, locality 16 & 17, 27.10.2010.

Meripilaceae Jülich

Irpex lacteus (Fr.: Fr.) Fr.: On dead wood of *Fagys sylvatica*, locality 1, 30.09.2010; On dead wood of *Fagys sylvatica*, locality 20, 23.10.2011; On dead wood of *Fagys sylvatica*, locality 27, 30.09.2010.

Meripilus giganteus (Pers. : Fr.) P. Karst: Fr.: On willow stumps, collected once, locality 21, 22.09.2007.

Meruliaceae P. Karst.

Abortiporus biennis (Bull.) Singer: On dead wood of *Quercus spp.*, locality 9, 28.10.2008; On dead oak stump, common, locality 9, 28.10.2008.

**Bjerkandera adusta* (Willd.: Fr.) P. Karst.: On dead wood of *Fagus sylvatica* and *Quercus spp.*, locality 9 & 12, 28.10.2008; Very common on stumps of *Carpinus betulus*, locality 9, 28.10.2008.

Phlebia tremellosa (Schrad. : Fr.) Burds. & Nakasone: On dead wood of *Fagus sylvatica*, common, locality 1 & 4, 31.09.2010.

**Steccherinum ochraceum* (Pers. ex J.F. Gmel. : Fr.) Gray: On dead wood of *Fagus moesiaca*, collected once, locality 24, 21.10.2011.

Polyporaceae Fr. ex Corda

Cerrena unicolor (Bull. : Fr.) Murrill: On beech, collected once, locality 2, 12.08.2009.

Corioloopsis gallica (Fr. : Fr.) Ryvarden: On wood of *Fraxinus spp.*, very common, locality 5 & 9, 26-27.09.2009.

Daedalea quercina (L.: Fr.) Pers.: On dead trunk of *Quercus spp.*, very common, locality 12, 26.10.2010; On fallen branches of *Quercus spp.*, common, locality 17, 27.10.2010.

Daedaleopsis confragosa (Bolton: Fr.) J. Schröt.: On fallen branches of *Fagus sylvatica*, common, locality 14 & 20, 26.10.2010; 11.08.2009; On fallen branches of *Salix alba*, locality 21, 11.08.2009.

Daedaleopsis tricolor (Bull. : Fr.) Bondartsev & Singer: On fallen branches of *Quercus spp.*, common, locality 5, 20.09.2007; On fallen branches of *Fagus sylvatica*, common, locality 23, 30.09.2010; On fallen branches of *Carpinus betulus*, locality 10 & 11, 27.09.2009; locality 16, 26.09.2009.

Dichomitus campestris (Quél.) Domański & Orlicz: On fallen branches of *Quercus spp.*, locality 12, 26.10.2010; On fallen branches of *Quercus spp.*, very common, locality 19, 27.10.2010; On fallen branches of *Quercus spp.*, very common, locality 8, 26.09.2009.

Fomes fomentarius (L. : Fr.) J.J. Kickx: On beech stump, very common, locality 14 & 15, 11.10.2007; 28.10.2008; Parasitic on wood of *Fagus spp.* and *Salix spp.*, common, perennial, localities 4, 5, 9, 13, 21, 22, 23 & 27, 12.08.2009; 18.09.2011; 28.10.2008; 11.08.2009; 30.09.2010.

Hapalopilus nidulans (Fr. : Fr.) P. Karst.: On fallen beech trunk, collected once, locality 2, 12.08.2009.

Lenzites betulina (L.: Fr.) Fr.: Parasitic on *Quercus spp.* and *Fagus spp.*, very common, localities 5 & 7, 20.09.2007; localities 13 & 14, 26.10.2010.

*CV *Lenzites warnieri* Durieu & Mont.: A rare species collected from fallen trunk of *Tillia spp.*, two fruiting bodies, locality 11, 29.10.2008; On fallen branches of *Populus tremula*, locality 13, 27.09.2009.

**Panus conchatus* (Bull. : Fr.) Fr.: On trunks of *Quercus spp.*, collected once, locality 19, 27.10.2010.

**Polyporus arcularius* (Batsch: Fr.) Fr.: On fallen trunks of *Fagus moesiaca*, common, locality 24, 21.10.2011; On fallen trunks of *Fagus sylvatica*, locality 23, 11.08.2009; On dead branches of *Quercus spp.*, locality 18, 27.10.2010.

Polyporus squamosus (Huds. : Fr.) Fr.: On beech stump, very common, locality 1, 12.08.2009; Parasitic on broad-leaved trees, very common, locality 5, 26.09.2009.

**Polyporus leptcephalus* (Jacq. : Fr.) Fr.: On beech branch, very common, locality 9, 12.11.2009; On dead wood of *Quercus* and *Fagus*, localities 9, 12, 13, & 18, 27.09.2009; 27.10.2010.

**Polyporus badius* (Pers.) Schwein: On willow branch, collected once, locality 10, 26.10.2010.

Polyporus brumalis (Pers. : Fr.) Fr.: On dead branches of *Quercus spp.*, common, localities 12 & 13, 11.10.2007.

**Polyporus ciliatus* Fr.: Fr.: On rotten wood of broad-leaved trees, collected once, localities 7 & 8, 26.09.2009.

**Pycnoporus cinnabarinus* (Jacq. : Fr.) P. Karst.: On dead wood of broad-leaved trees and rarely on conifers, very common, localities 5 & 7, 18.09.2011; 12 & 13, 26.10.2010.

Trametes gibbosa (Pers. : Fr.) Fr.: On dead wood of broad-leaved trees, very common, locality 12 & 13, 26.10.2010.

Trametes hirsuta (Wulfen : Fr.) Pilát: On dead wood of *Quercus spp.*, very common, localities 9, 10, 11, 12 & 13, 10.10.2007; 29.10.2008; 27.09.2009; On dead wood of *Fagus spp.*, localities 2, 14, 23 & 38; On dead wood of on *Corylus avellana*, locality 5 & 16, 20.09.2007; 27.10.2010.

Trametes versicolor (L. : Fr.) Lloyd: On beech stump, locality 14, 28.10.2008; On fallen beech trunk, very common, locality 4, 12.08.2009; On beech stump, very common, locality 2, 12.08.2009; On dead wood of *Quercus spp.* and

Fagus spp., very common, localities 9, 14 & 15, 29.10.2008.

Trichaptum abietinum (Pers. ex J.F. Gmel. : Fr.) Ryvarden: On fallen fir trunk, locality 4, 12.08.2009; On spruce stump, locality 24, 19.09.2008; On fallen spruce trunk, locality 25, 22.10.2011; On fallen fir trunk, locality 2, 12.08.2009; On fallen fir trunk, locality 9, 27.09.2009.

Trichaptum fuscoviolaceum (Ehrenb.: Fr.) Ryvarden: On fallen pine trunk, locality 24, 21.10.2011; On spruce stump, collected once, locality 2, 12.08.2009.

Russulales Kreisel ex P.M. Kirk, P.F. Cannon and J.C. David

Hericiaceae Donk

*CV *Hericium coralloides* (Scop. : Fr.) Pers.: A rare species collected from stump of *Fagus spp.*, collected once, locality 20, 23.10.2011.

*CV *Hericium erinaceus* (Bull. : Fr.) Pers.: A rare species collected from stump of *Fagus spp.*, locality 23, 11.08.2009; On fallen beech trunk, locality 23, 23.10.2011.

Stereaceae Pilát

**Stereum hirsutum* (Willd. : Fr.) Gray: On beech branch, locality 14, 26.10.2010; On beech branch, locality 2, 20.04.2008; On branches of *Quercus cerris*, locality 12, 26.10.2010; On dead branches and stump of *Quercus*, localities 5 & 7, 26.09.2009; On branch of *Corylus avellana*, locality 9, 28.10.2008.

**Stereum sanguinolentum* (Alb. & Schwein. : Fr.) Fr.: On dead wood of conifers, collected once, localities 2, 30.09.2010.

Thelephorales Corner ex Oberw.

Thelephoraceae Chevall.

**Thelephora terrestris* Ehrh.: Fr.: On dead twigs or leaf litter, collected once, locality 4, 30.09.2010.

Tremellales Fr.

Tremellaceae Fr.

**Tremella encephala* Pers. : Fr.: On deadwood of fir trees, collected once, locality 20, 23.10.2011.

**Tremella mesenterica* Retz: Fr.: On beech branch, locality 15, 11.10.2007; On dead branches of *Quercus spp.* trees, locality 14, 26.10.2010.

Conclusion

This study presents 110 species of wood-decaying macrofungi from the Vassilyovska mountain of Bulgaria. Of these, 75 species are reported for the first time from Forebalkan. They belong to the two classes Pezizomycota (6 species) and Agaricomycota (104 species). Predominant part of the species in the region belong to *Polyporaceae* (23 species), *Hymenochaetaceae* (15 species), and *Fomitopsidaceae* (7 species). Beech, fir, pine, deciduous and mixed forests provide very suitable conditions for members of these families. Several species were living on dead treestumps, trunks, branches, leaf or needle litter and are decaying them. Some live as parasites on live trees and cause organic product loss and structural damage to host trees. *Armillaria mellea*, *A. socialis*, *Daedalea quercina*, *Phelinus ignarius*, *Fomes fomentarius*, *Fomitopsis pinicola*, *Ganoderma lucidum*, *Hericium ramosum*, and *Lenzites betulina* are particularly important as parasitic species. The most widespread species in the studied area are *Fomes fomentarius*, *Fomitopsis pinicola*, *Hypholoma fasciculare*, and *Trichaptum abietinum*. They are very common on dead fir trunks and stumps or living trees.

The wood-decaying fungi *Pleurotus ostreatus*, *P. cornucopiae* and *Polyporus squamosus* are known as edible mushrooms that are collected and consumed by local people. The other edible wood-decaying species are not recognised or valued locally.

Hope that this study will enrich information about diversity of wood-decaying macrofungi of the Vassilyovska mountain as well as for the mycota

of Forebalkan floristic region in Bulgaria as a whole.

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