

Beetles (Coleoptera) collected from fruiting bodies of fungi (excl. polyporoid and hypogeous fungi) in the Pieniny National Park

Chrząszcze (Coleoptera) zebrane z owocników grzybów (z wyłączeniem grzybów poliporoidalnych i podziemnych) w Pienińskim Parku Narodowym

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ABSTRACT: This paper summarises research on interactions between beetles and fleshy macromycetes in the Pieniny National Park (PNP), S Poland. The field studies were carried out in 2016-2018. Altogether, 197 samples from 103 species of fungi (98 species of Basidiomycota and 5 of Ascomycota) were collected. Data are reported on fungi from various systematic and ecological groups (but not polyporoid and hypogeous fungi; these will be discussed separately). As a result of the survey, 24 species of fungi were found in the PNP for the first time, including three species endangered (E) in Poland: *Asterostroma cervicolor* (BERK. & M.A. CURTIS) MASSEE, *Lactarius zonarioides* KÜHNER & ROMAGN. and *Hydropus atramentosus* (KALCHBR.) KOTL. & POUZAR. During the survey, 9665 specimens of beetles were collected, among which 149 species from 22 families were identified. They included a significant number of interesting and rare beetles. *Atheta depressicollis* FAUVEL was recorded for the first time in Poland, and *Gyrophaena rousi* DVOŘAK was found for the second time in this country. Four of these beetle species are on the Polish Red List of Animals: *Agathidium bescidicum* REITTER – category CR, *Omalius septentrionis* THOMSON and *Mycetophagus ater* (REITTER) – both EN and *Acrulia inflata* (GYLLENHAL) – VU. Data on the relationships between beetles and fungi, as well as on the succession of beetles on decomposing fungi are summarised.

KEY WORDS: Ascomycota, Basidiomycota, ecology, trophic interactions, Pieniny Mts, Polish Carpathians.

Introduction

This is the second paper reporting the results of the survey of beetles associated with fungi in the Pieniny National Park (S Poland). Previous paper (CHACHUŁA et al. 2018, 2019) focused on polyporoid fungi, while the present one focuses on the remaining groups of macromycetes, but excluding hypogeous fungi. In contrast to interactions of beetles with polyporoid fungi, which are commonly studied (see literature in SCHIGEL 2012 and CHACHUŁA et al. 2019), there are far fewer papers on the interactions of beetles with other groups of macromycetes. There are several reasons for this: identification of both fungi and beetles is more difficult (as mostly rove

beetles are collected on non-polyporoid macromycetes), the rearing of beetles is not as easy as in the case of polyporoid fungi, the fungi are relatively short-lived, and their occurrence is more closely related to weather conditions and varies significantly from one year to another.

Associations of beetles with non-polyporoid macromycetes were discussed in monographs (e.g. BENICK 1952) and papers (e.g. EISFELDER 1961, 1963). A study of fungi of the genera *Armillaria*, *Pleurotus* and *Grifola* in northern Europe was published by SCHIGEL (2007). Various aspects of interactions between agaricoid Basidiomycota and beetles were studied by HENNEBERG (2003). Numerous papers were published on the mycophagy of Staphylinidae on

non-polyporoid macromycetes, e.g. reviews by NEWTON (1984) or LIPKOW & BETZ (2005), as well as papers focusing on North American fauna (e.g. ASHE 1984, HANLEY & GOODRICH 1995). Papers on beetles occurring on fleshy fungi in Poland are very scarce – one of the very few examples is LUTEREK (1969).

The Pieniny National Park (henceforth PNP) covers an area of 2371 ha and protects a predominantly limestone mountain range with elevations between 421–982 m a.s.l. The majority of the PNP (1725 ha, 72.8% of the area) is covered with forests (see CHACHUŁA et al. 2018, 2019 for more details of the area studied).

The aim of the present study was to collect data on beetles associated with fungi in the PNP. For precise data on the sampling localities, see Appendices 1 and 2.

Material and methods

Study area

Beetles were collected in the PNP between 2016 and 2018, from January until November (research permit No. PB-514-07/16), along specified transects in 40 sampling areas (Fig. 1) and 197 localities at altitudes between 422–930 m a.s.l. in 23 plant communities. The majority of sampling sites were established in the following 5 habitats: eutrophic beech forest *Dentario glandulosae-Fagetum typicum* var. *typicum* – 59 sites, the floristically poor variant of eutrophic beech forest *Dentario glandulosae-Fagetum abietetosum* – 26 sites, the floristically poor variant of xerothermic limestone beech forest *Carici albae-Fagetum abietetosum* – 20 sites, eutrophic beech forest *Dentario glandulosae-Fagetum abietetosum* var. *typicum* – 16 sites, and the floristically poor variant of eutrophic beech forest *Dentario glandulosae-Fagetum typicum* – 13 sites.

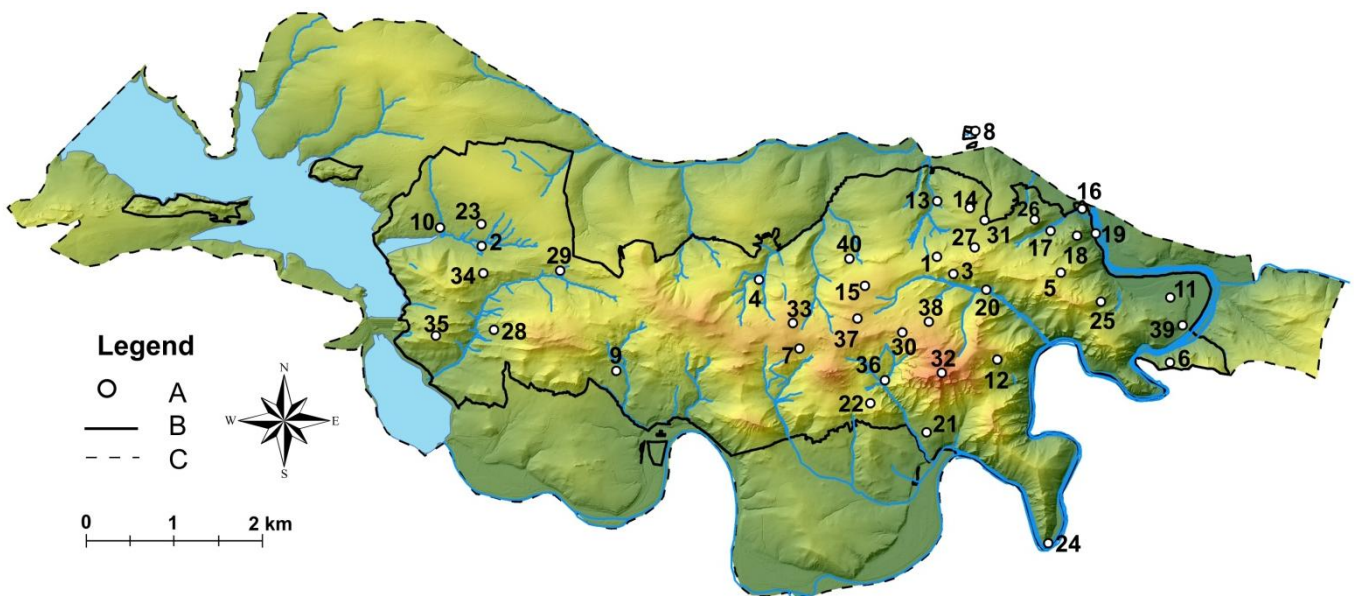


Fig. 1. Sampling areas in the Pieniny National Park. Symbols: A – location of the sampling areas (1 – Bajków Groń, forest, 2 – Barbarzyna, forest, 3 – Białe Skalki Mt., forest, 4 – Biały Potok, stream, 5 – Burzana, forest, 6 – Bystrzyk Mt., forest, 7 – Czerniawa, forest, 8 – Around the PNP's administration building, 9 – Gróbka, meadows and forest, 10 – Harczygrunt, meadows and forest, 11 – Kras, meadows and woodland, 12 – Ligarki, meadows and forest, 13 – Łonny Potok, forest stream valley, 14 – Łupisko, forest, 15 – Mała Dolina, meadows and forest, 16 – Młaka Pod Ociemnym, wetland area, 17 – Ociemny Potok, forest stream valley, 18 – Ociemny Wierch Mt., forest, 19 – Pajówka, meadows and forest, 20 – Pieniński Potok, forest stream valley, 21 – Podłażce, pasture and woodland, 22 – Podskalnia Góra Mt., forest, 23 – Poręba, forest, 24 – Dunajec Gorge, near Szopa Maćkowa, forest, 25 – Sokolica Mt., forest, 26 – Sowie Skalki Mt., forest, 27 – Stolarzówka, meadows, 28 – Stus, meadows and forest, 29 – Szkółka Leśna, forest near forest nursery, 30 – Szopka, mountain pass, meadows and forest, 31 – Toporzyskowe, forest, 32 – Trzy Korony Mt., meadows and forest, 33 – Tylskie Góry, meadows and forest, 34 – Ule, meadows and forest, 35 – Upszar, meadows and forest, 36 – Wąwóz Sobczański, ravine, 37 – Wielka Dolina, meadows, woodland and forest, 38 – Wyrobek, meadows and woodland, 39 – Za Piecem, meadows and woodland, 40 – Zagroń, meadows and forest), B – border of the national park, C – buffer zone of the national park.

Ryc. 1. Stanowiska badawcze w Pienińskim Parku Narodowym. Oznaczenia: A – lokalizacja powierzchni badawczych (1-40), B – granica parku narodowego, C – otulina parku narodowego.

Sample collection

The geographical coordinates of the collecting localities were recorded with a Garmin III+ GPS receiver. Data on the stage of decomposition (Table 1) and number of sporocarps were noted. The following information was recorded in the field: habitat, species of fungus (when identifiable in the field), substrate on which the fungus was growing, stage of decomposition of the fungi and the number of fruiting bodies on which beetles were collected. The beetles were collected with an entomological net, aspirator, and sometimes also a Winkler apparatus. Simplified Scheerpeltz fluid (96% ethanol mixed with an equal amount of 10% aq. acetic acid, CHACHUŁA et al. 2019) was used as the conservation agent.

Table 1. Developmental / decomposition stages of fungi basidiocarps, according to THUNES (1994), modified by SCHIGEL et al. 2004. Sporocarps in decomposition stage IV were not recorded during the present study

Tabela 1. Stadia rozwoju / rozkładu owocników grzybów, według THUNES (1994), zmodyfikowane przez SCHIGEL et al. 2004. Owocników w IV stadium rozkładu nie znaleziono w czasie prowadzonych badań

Stage Stadium	Description of basidiocarp Opis owocnika
I	living, fresh and still actively growing basidiocarp
II D	living, fully grown, mature basidiocarp (dry)
II W	living, fully grown, mature basidiocarp (wet)
III D	dead, but fairly well-preserved basidiocarp; original outer and inner structures still easily seen (dry)
III W	dead, but fairly well-preserved basidiocarp; original outer and inner structures still easily seen (wet)
IV D	dead, strongly decomposed basidiocarp, structure transformed into an amorphous mass (dry)

Sample processing

Fungi were identified with a Biolar PZO compound microscope with Nomarski interference contrast and immersion objective (100× magnification). Microscope slides were prepared from fresh specimens in water, Melzer's reagent and a solution of Congo Red or Cotton Blue (CLEMENÇON 2009). The keys by HANSEN et al. (1997), HANSEN & KNUDSEN (2000) and KNUDSEN & VESTERHOLT (2008) were used to identify the fungi. The taxonomy of the fungi was adopted after Index Fungorum (2020). The threat categories were taken from the Polish Red List of macromycetes (WOJEWODA & ŁAWRYNOWICZ 2006). In most cases, the beetles were identified with the aid of keys published in the

series "Die Käfer Mitteleuropas" (including ASSING & SCHÜLKE 2012) and the "Keys for the Identification of Polish Insects" (e.g. SZUJECKI 2008). The taxonomy and systematics of Coleoptera were adopted from the Catalogue of Palaearctic Coleoptera (LÖBL & SMETANA 2007, 2008, 2010, LÖBL & LÖBL 2015, 2016). The threat categories were taken from the Polish Red List of Animals (PAWŁOWSKI et al. 2002).

Three informal groups of fungi are recognised in the present paper (see the Discussion) on the basis of their morphology and biology: ascomycetes (Pezizales), agaricoid basidiomycetes (Agaricales, Boletales and Russulales) and aphyllorphoroid basidiomycetes (Auriculariales, Cantharellales, Hymenochaetales, Phallales, Thelephorales and Tremellales).

Depending on the type of relationship between a beetle and its fungal host, the beetle species were placed in two trophic groups: obligatory mycetobionts (MB – mycetobionts) that feed on fungi either as adults or larvae, and non-mycetobionts (NMB), which included mycetophiles, predators, saproxylics and beetles with undefined or uncertain trophic preferences (based on BENICK 1952, GRAVES 1960, KLIMASZEWSKI & PECK 1987, CLINE & LESCHEN 2005, BOROWSKI 2006).

Results

Fungi

Beetles were collected from 197 samples of fungi. The fungi recorded, belonging to 103 species (Table 2), included 5 species of ascomycetes, members of the Pezizales class, and 98 species of basidiomycetes, members of the following classes: Agaricales (62 species), Russulales (16 spp.), Boletales (10 spp.), Hymenochaetales (3 spp.), Cantharellales (2 spp.), Phallales (2 spp.), Auriculariales (1 sp.), Thelephorales (1 sp.) and Tremellales (1 sp.). The fungi were members of 31 families. Tricholomataceae, Russulaceae and Boletaceae were the species-richest families with 28, 10 and 8 species respectively. Twenty of the fungi species that hosted beetles are legally protected, rare, or endangered in Poland (WOJEWODA & ŁAWRYNOWICZ 2006, Rozporządzenie 2014). Four species are partially protected in Poland: *Morchella esculenta*, *Hericium flagellum*, *Lactarius zonarioides*, and *Tricholoma aurantium*; four are endangered (E): *Hericium flagellum*, *Asterostroma cervicolor*, *Lactarius zonarioides* and *Hydropus atramentosus*; seven are vulnerable (V) – *Artomyces pyxidatus*, *Gyromitra infula*, *Lentinellus ursinus*, *Sarcodon imbricatus*, *Pleurotus pulmonarius*, *Mycena renati* and *Tricholoma orirubens*; seven are rare (R) – *Morchella esculenta*, *Porphyrellus porphyrosporus*, *Crepidotus applanatus*, *Paxillus rubicundulus*, *Ramaria flava*, *Tricholoma*

aurantium and *Tricholoma sejunctum*. Finally, two are indeterminate (I) – *Russula chloroides* and *Tricholoma equestre* var. *populinum*; according to WOJEWODA & ŁAWRYNOWICZ (2006), these are taxa known to be Extinct, Endangered, Vulnerable or Rare but insufficient information is available to state unequivocally which of the four categories is appropriate.

Twenty-four species of fungi were recorded for the first time in the PNP. They include three endangered species – *Asterostroma cervicolor*, *Lactarius zonarioides* and *Hydopus atramentosus*, one

vulnerable species – *Pleurotus pulmonarius*, one rare species – *Crepidotus applanatus*, and one indeterminate species – *Tricholoma equestre* var. *populinum*. The other species of fungi recorded in the PNP for the first time were *Armillaria borealis*, *A. lutea*, *Butyriboletus subappendiculatus*, *Gerronema strombodes*, *Hymenochaete tabacina*, *Inocybe splendens*, *Lacrymaria lacrymabunda*, *Lactarius pterosporus*, *Leucocybe connata*, *Mycena rosea*, *Mycena viridimarginata*, *Peziza micropus*, *P. vesiculosa*, *Pholiota limonella*, *P. squarrosoides*, *Pleurotus abieticola* and *Tricholoma fulvum*.

Table 2. List of fungi associated with particular species of beetles (Coleoptera). Symbols of decomposition stage – see Table 1

Tabela 2. Grzyby związane z poszczególnymi gatunkami chrząszczy (Coleoptera). Symbole klas rozkładu – por. Tabela 1

Fungal taxon Takson grzyba	Species of beetles [total number of beetle species] Gatunki chrząszczy [łączna liczba gatunków chrząszczy]	Basidiocarp decomposition stage Stadium rozkładu owocnika
ASCOMYCOTA		
Discinaceae		
<i>Gyromitra infula</i> (SCHAEFF.) QUÉL.	<i>Tachinus marginatus</i> [1]	III D
Morchellaceae		
<i>Morchella esculenta</i> (L.) PERS.	<i>Aleochara fumata</i> , <i>Apocatops nigrita</i> , <i>Atheta crassicornis</i> , <i>A. nigritula</i> , <i>Lordithon bimaculatus</i> , <i>L. lunulatus</i> , <i>L. thoracicus</i> [7]	II W
Pezizaceae		
<i>Peziza arvernensi</i> ROZE & BOUD.	<i>Atheta orbata</i> [1]	II W
<i>Peziza micropus</i> PERS.	<i>Agathidium nigripenne</i> , <i>Cerylon ferrugineum</i> , <i>Leptusa fumida</i> [3]	I
<i>Peziza vesiculosa</i> BULL.	<i>Atheta castanoptera</i> , <i>A. crassicornis</i> , <i>A. nigra</i> , <i>Bisnius fimetarius</i> , <i>Colenis immunda</i> , <i>Hermaeophaga mercurialis</i> , <i>Lordithon lunulatus</i> , <i>L. thoracicus</i> , <i>Megarthus depressus</i> , <i>Megasternum concinnum</i> , <i>Micropeplus porcatus</i> , <i>Notiophilus aquaticus</i> , <i>Omalius rivulare</i> , <i>O. septentrionis</i> , <i>Omosita depressa</i> , <i>Ontholestes haroldi</i> , <i>Rugilus rufipes</i> [17]	III W
BASIDIOMYCOTA		
Agaricaceae		
<i>Agaricus augustus</i> FR.	<i>Atheta castanoptera</i> , <i>A. crassicornis</i> [2]	III W
<i>Echinoderma asperum</i> (PERS.) BON	<i>Atheta britanniae</i> , <i>A. crassicornis</i> , <i>A. fungicola</i> , <i>Autalia longicornis</i> , <i>Gyrophana fasciata</i> , <i>G. manca</i> , <i>G. nana</i> , <i>Lordithon lunulatus</i> , <i>L. trimaculatus</i> , <i>Oxyroda formosa</i> , <i>Proteinus brachypterus</i> , <i>P. crenulatus</i> [12]	II W
<i>Macrolepiota procera</i> (SCOP.) SINGER	<i>Oxyroda formosa</i> [1]	I
<i>Chlorophyllum rhacodes</i> (VITTAD.) VELLINGA	<i>Aleochara fumata</i> , <i>Anoplotrupes stercorosus</i> , <i>Atheta amicula</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>A. dadopora</i> , <i>A. picipes</i> , <i>A. ravilla</i> , <i>A. sodalis</i> , <i>Carphacis striatus</i> , <i>Lordithon bimaculatus</i> , <i>L. lunulatus</i> , <i>L. thoracicus</i> , <i>L. trinotatus</i> , <i>Pocadius adustus</i> , <i>Sericoderus lateralis</i> [16]	III W

Auriculariaceae		
<i>Auricularia auricula-judae</i> (BULL.) QUÉL.	<i>Gyrophaena joyi</i> [1]	II W
Auriscalpiaceae		
<i>Artomyces pyxidatus</i> (PERS.) JÜLICH	<i>Scaphisoma boreale</i> [1]	I
<i>Lentinellus ursinus</i> (FR.) KÜHNER	<i>Atheta crassicornis</i> , <i>A. marcida</i> , <i>A. nigrifula</i> , <i>A. paracrassicornis</i> , <i>Lordithon lunulatus</i> , <i>L. trimaculatus</i> , <i>Oxypoda alternans</i> , <i>Proteinus brachypterus</i> [8]	III W
Bankeraceae		
<i>Sarcodon imbricatus</i> (L.) P. KARST.	<i>Gyrophaena pulchella</i> , <i>Oxypoda alternans</i> , <i>Proteinus crenulatus</i> [3]	II W
Boletaceae		
<i>Boletus edulis</i> BULL.	<i>Oxypoda alternans</i> [1]	III W
<i>Boletus luridiformis</i> var. <i>luridiformis</i> ROSTK.	<i>Atheta aeneicollis</i> , <i>A. britanniae</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>A. dadopora</i> , <i>A. pallidicornis</i> , <i>A. picipes</i> , <i>A. ravilla</i> , <i>A. sodalis</i> , <i>Gyrophaena poweri</i> , <i>Lordithon bimaculatus</i> [11]	III D
	<i>Lordithon bimaculatus</i> , <i>L. lunulatus</i> , <i>Oxypoda formosa</i> [3]	III W
<i>Boletus reticulatus</i> SCHAEFF.	<i>Atheta castanoptera</i> , <i>A. crassicornis</i> , <i>A. dadopora</i> , <i>A. nigrifula</i> , <i>A. paracrassicornis</i> , <i>Lordithon exoletus</i> , <i>L. lunulatus</i> , <i>Ontholestes</i> <i>tesselatus</i> [8]	III W
<i>Butyriboletus subappendiculatus</i> (DERMEK, LAZEBN. & J. VESELSKÝ) D. ARORA & J.L. FRANK	<i>Oxypoda alternans</i> [1]	II W
<i>Caloboletus calopus</i> (PERS.) VIZZINI	<i>Atheta castanoptera</i> , <i>A. paracrassicornis</i> [2]	III W
<i>Porphyrellus porphyrosporus</i> (FR. & HÖK) E.-J. GILBERT	<i>Atheta euryptera</i> , <i>Lordithon bimaculatus</i> , <i>L. lunulatus</i> , <i>L. thoracicus</i> [4]	III W
<i>Suillellus luridus</i> (SCHAEFF.) MURRILL	<i>Aleochara fumata</i> , <i>Atheta castanoptera</i> , <i>A. corvina</i> , <i>A. crassicornis</i> , <i>A. paracrassicornis</i> , <i>A. sodalis</i> , <i>Lordithon</i> <i>lunulatus</i> , <i>L. thoracicus</i> , <i>Oxypoda arborea</i> , <i>Oxyporus rufus</i> [10]	III W
<i>Xerocomus pascuus</i> (PERS.) KROMBH.	<i>Atheta gagatina</i> , <i>A. paracrassicornis</i> , <i>Lordithon thoracicus</i> , <i>Oxypoda alternans</i> , <i>O. formosa</i> [5]	III W
Cantharellaceae		
<i>Craterellus cornucopioides</i> (L.) PERS.	<i>Atheta britanniae</i> , <i>A. corvina</i> , <i>A. gagatina</i> , <i>A. picipes</i> , <i>A. sodalis</i> , <i>Tetratoma ancora</i> [6]	III W
Coprinaceae		
<i>Coprinellus disseminates</i> (PERS.) J.E. LANGE	<i>Gyrophaena affinis</i> , <i>G. fasciata</i> , <i>G. pulchella</i> , <i>Lordithon exoletus</i> , <i>L. lunulatus</i> , <i>L. trimaculatus</i> , <i>Nossidium pilosellum</i> , <i>Sciodreporoides watsoni</i> , <i>Triplax russica</i> [9]	I
<i>Lacrymaria lacrymabunda</i> (BULL.) PAT.	<i>Atheta castanoptera</i> , <i>A. crassicornis</i> , <i>A. marcida</i> , <i>A. picipes</i> , <i>A. ravilla</i> , <i>A. sodalis</i> , <i>Autalia longicornis</i> , <i>Proteinus brachypterus</i> [8]	III W
<i>Psathyrella candolleana</i> (FR.) MAIRE	<i>Anotylus sculpturatus</i> , <i>Gyrophaena affinis</i> , <i>G. fasciata</i> , <i>G. nana</i> [4]	II W
Cortinariaceae		
<i>Crepidotus applanatus</i> (PERS.) P. KUMM.	<i>Gyrophaena manca</i> [1]	II W
<i>Crepidotus mollis</i> (SCHAEFF.) STAUDE	<i>Gyrophaena fasciata</i> , <i>G. joyi</i> [2]	I
	<i>Gyrophaena affinis</i> , <i>G. fasciata</i> , <i>G. gentilis</i> , <i>G. joyi</i> , <i>Oxyporus</i> <i>maxillosus</i> , <i>Scaphisoma agaricinum</i> [6]	II W
<i>Inocybe splendens</i> R. HEIM	<i>Gyrophaena joyioides</i> [1]	I
<i>Clitopilus prunulus</i> (SCOP.) P. KUMM.	<i>Atheta celata</i> , <i>A. crassicornis</i> , <i>Lordithon thoracicus</i> [3]	II W
<i>Entoloma clypeatum</i> (L.) P. KUMM.	<i>Atheta castanoptera</i> , <i>A. crassicornis</i> , <i>A. dadopora</i> , <i>A. gagatina</i> , <i>Gyrophaena bihamata</i> , <i>G. fasciata</i> , <i>G. joyioides</i> , <i>G. nana</i> ,	II W

	<i>G. polita</i> , <i>G. poweri</i> , <i>G. rousi</i> , <i>Lordithon lunulatus</i> , <i>L. thoracicus</i> , <i>Omalium rivulare</i> [14]	
Hericiaceae		
<i>Hericium flagellum</i> (SCOP.) Pers.	<i>Agathidium nigripenne</i> , <i>Cerylon ferrugineum</i> , <i>Quedius mesomelinus mesomelinus</i> , <i>Rhyncolus elongatus</i> [4]	III W
Hydnaceae		
<i>Hydnum repandum</i> L.	<i>Atheta paracrassicornis</i> , <i>Autalia longicornis</i> [2]	II W
	<i>Atheta britanniae</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>A. dadopora</i> , <i>A. marcida</i> , <i>A. nigrifula</i> , <i>A. paracrassicornis</i> , <i>A. sodalis</i> , <i>Autalia longicornis</i> , <i>Lordithon exoletus</i> , <i>L. lunulatus</i> , <i>Oxypoda formosa</i> , <i>Proteinus brachypterus</i> , <i>P. crenulatus</i> [14]	III W
Hygrophoraceae		
<i>Gerronema strombodes</i> (BERK. & MONT.) SINGER	<i>Gyrophana affinis</i> , <i>G. fasciata</i> , <i>G. manca</i> , <i>G. minima</i> , <i>G. poweri</i> , <i>G. pulchella</i> , <i>Oxypoda formosa</i> [7]	I
Hymenochaetaceae		
<i>Hymenochaete tabacina</i> (SOWERBY) S.H. HE & JIAO YANG	<i>Ennearthron cornutum</i> [1]	II D
Hymenogastraceae		
<i>Hebeloma sinapizans</i> (PAULET) GILLET	<i>Gyrophana poweri</i> [1]	II W
Hyphodermataceae		
<i>Schizopora paradoxa</i> (SCHRAD.) DONK	<i>Agaricochara latissima</i> [1]	I
Lachnocladiaceae		
<i>Asterostroma cervicolor</i> (BERK. & M.A. CURTIS) MASSEE	<i>Quedius xanthopus</i> [1]	I
Lycoperdaceae		
<i>Lycoperdon mammiforme</i> PERS.	<i>Pocadius adustus</i> , <i>P. ferrugineus</i> [2]	II W
<i>Lycoperdon nigrescens</i> PERS.	<i>Pocadius adustus</i> [1]	III W
<i>Lycoperdon perlatum</i> PERS.	<i>Othius subuliformis</i> , <i>Pocadius adustus</i> [2]	II W
<i>Lycoperdon pyriforme</i> (SCHAEFF.) VIZZINI	<i>Pocadius adustus</i> , <i>P. ferrugineus</i> [2]	III W
<i>Bovistella utriformis</i> (BULL.) DEMOULIN & REBRIEV	<i>Tachinus corticinus</i> [1]	III W
Marasmiaceae		
<i>Armillaria borealis</i> MARXM. & KORHONEN	<i>Anoplotrupes stercorosus</i> , <i>Quedius mesomelinus mesomelinus</i> [2]	III W
<i>Armillaria lutea</i> GILLET	<i>Atheta crassicornis</i> , <i>Cychramus luteus</i> , <i>C. variegatus</i> , <i>Gyrophana bihamata</i> , <i>G. fasciata</i> , <i>G. gentilis</i> , <i>G. joyi</i> , <i>G. poweri</i> , <i>G. pulchella</i> , <i>Lordithon trinotatus</i> , <i>Oxypoda formosa</i> , <i>Oxyporus maxillosus</i> [12]	II W
	<i>Anthobium atrocephalum</i> , <i>Atheta laticollis</i> [2]	III W
<i>Flammulina velutipes</i> (CURTIS) SINGER	<i>Anthobium atrocephalum</i> , <i>Atheta castanoptera</i> , <i>A. corvina</i> , <i>A. crassicornis</i> , <i>A. fungivora</i> , <i>A. marcida</i> , <i>A. paracrassicornis</i> , <i>A. ravilla</i> , <i>A. taxiceroides</i> , <i>Bolitochara obliqua</i> , <i>Leptusa fumida</i> , <i>Omalium rivulare</i> , <i>Oxypoda flavicornis</i> , <i>Proteinus brachypterus</i> , <i>Tetratoma fungorum</i> [15]	I
<i>Mycetinis alliaceus</i> (JACQ.) EARLE EX A.W. WILSON & DESJARDIN	<i>Gyrophana gentilis</i> [1]	II W
<i>Marasmius oreades</i> (BOLTON) FR.	<i>Gyrophana affinis</i> [1]	II W
<i>Rhodocollybia maculata</i> (ALB. & SCHWEIN.) SINGER	<i>Gyrophana minima</i> , <i>Lordithon bimaculatus</i> , <i>L. exoletus</i> , <i>L. thoracicus</i> , <i>L. trinotatus</i> [5]	II D
<i>Hymenopellis radicata</i> (RELHAN) R.H. PETERSEN	<i>Gyrophana boleti</i> [1]	II W

Paxillaceae		
<i>Tapinella atrotomentosa</i> (BATSCH) ŠUTARA	<i>Atheta gagatina</i> , <i>Proteinus brachypterus</i> [2]	II W
<i>Paxillus rubicundulus</i> P. D. ORTON	<i>Atheta castanoptera</i> , <i>A. crassicornis</i> , <i>A. gagatina</i> , <i>A. palleola</i> , <i>Gyrophana affinis</i> , <i>G. fasciata</i> , <i>G. minima</i> , <i>Oxypoda formosa</i> [9]	I
Peniophoraceae		
<i>Peniophora incarnata</i> (PERS.) P. KARST.	<i>Timarcha metallica</i> [1]	III W
Phallaceae		
<i>Phallus impudicus</i> L.	<i>Atheta britanniae</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>A. fungicola</i> , <i>A. marcida</i> , <i>A. sodalis</i> , <i>Oiceoptoma thoracicum</i> , <i>Omalium rivulare</i> , <i>O. septentrionis</i> , <i>O. validum</i> , <i>Omosita depressa</i> , <i>Proteinus atomarius</i> , <i>P. brachypterus</i> , <i>P. crenulatus</i> , <i>P. ovalis</i> , <i>Sciodreporoides fumatus</i> [16]	II W
Pleurotaceae		
<i>Pleurotus abieticola</i> R.H. PETERSEN & K.W. HUGHES	<i>Rhizophagus dispar</i> [1]	III D
<i>Pleurotus pulmonarius</i> (FR.) QUÉL.	<i>Acrulia inflata</i> , <i>Agathidium pisanum</i> , <i>Cerylon fagi</i> , <i>Gyrophana fasciata</i> , <i>G. poweri</i> , <i>Rhizophagus dispar</i> [6]	I
	<i>Acrulia inflata</i> , <i>Agathidium pisanum</i> , <i>Aleochara fumata</i> , <i>Aspidiphorus orbiculatus</i> , <i>Atheta castanoptera</i> , <i>A. cauta</i> , <i>A. coriaria</i> , <i>A. crassicornis</i> , <i>A. dadopora</i> , <i>A. picipes</i> , <i>A. ravilla</i> , <i>A. sodalis</i> , <i>Autalia longicornis</i> , <i>Bisnius fimetarius</i> , <i>Bolitochara obliqua</i> , <i>Cartodere nodifer</i> , <i>Cerylon ferrugineum</i> , <i>Cyllodes ater</i> , <i>Gyrophana affinis</i> , <i>G. gentilis</i> , <i>G. poweri</i> , <i>Litargus connexus</i> , <i>Lordithon lunulatus</i> , <i>Megarthritis depressus</i> , <i>Mycetophagus ater</i> , <i>M. multipunctatus</i> , <i>M. quadripustulatus</i> , <i>Oxypoda formosa</i> , <i>Quedius mesomelinus mesomelinus</i> , <i>Triplax aenea</i> , <i>T. rufipes</i> [31]	III D
	<i>Atheta marcida</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>Bolitochara obliqua</i> , <i>Omalium rivulare</i> , <i>Oxypoda formosa</i> , <i>Rhizophagus dispar</i> , <i>Triplax aenea</i> [8]	III W
Pluteaceae		
<i>Amanita muscaria</i> (L.) LAM.	<i>Oxypoda formosa</i> [1]	I
	<i>Atheta britanniae</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>A. gagatina</i> , <i>A. marcida</i> , <i>A. nigrigula</i> , <i>A. ravilla</i> , <i>Gyrophana poweri</i> , <i>Lordithon bimaculatus</i> , <i>L. exoletus</i> , <i>L. lunulatus</i> , <i>L. thoracicus</i> , <i>L. trinotatus</i> , <i>Oxypoda alternans</i> , <i>O. formosa</i> [15]	III W
<i>Amanita rubescens</i> PERS.	<i>Atheta castanoptera</i> , <i>A. celata</i> , <i>A. crassicornis</i> , <i>A. Fungicola</i> , <i>A. nigrigula</i> , <i>A. subtilis</i> , <i>Bryophacis crassicornis</i> , <i>Gyrophana bihamata</i> , <i>Lordithon bimaculatus</i> , <i>L. lunulatus</i> , <i>L. trimaculatus</i> , <i>L. thoracicus</i> [12]	II W
	<i>Atheta paracrassicornis</i> , <i>A. sodalis</i> , <i>Gyrophana affinis</i> , <i>G. gentilis</i> , <i>Lordithon exoletus</i> , <i>L. lunulatus</i> , <i>Pocadius adustus</i> [7]	III W
<i>Pluteus cervinus</i> (SCHAEFF.) P. KUMM.	<i>Gyrophana affinis</i> , <i>G. gentilis</i> , <i>G. nana</i> , <i>G. poweri</i> [4]	II W
<i>Pluteus salicinus</i> (PERS.) P. KUMM.	<i>Gyrophana affinis</i> , <i>G. gentilis</i> , <i>G. poweri</i> , <i>Oxypoda formosa</i> [4]	I
	<i>Triphyllus bicolor</i> [1]	II D
	<i>Gyrophana affinis</i> , <i>G. fasciata</i> , <i>G. gentilis</i> , <i>G. minima</i> , <i>G. poweri</i> , <i>G. rousi</i> , <i>G. strictula</i> [7]	II W
<i>Volvopluteus gloiocephalus</i> (DC.) VIZZINI, CONTU & JUSTO	<i>Atheta crassicornis</i> , <i>Gyrophana affinis</i> , <i>G. bihamata</i> , <i>G. fasciata</i> , <i>G. minima</i> , <i>Lordithon bimaculatus</i> , <i>L. lunulatus</i> , <i>L. thoracicus</i> , <i>L. trimaculatus</i> , <i>Oxyporus maxillosus</i> [10]	II W
Ramariaceae		
<i>Ramaria flava</i> (SCHAEFF.) QUÉL.	<i>Apocatops nigrita</i> [1]	II W

Russulaceae		
<i>Lactarius piperatus</i> (L.) PERS.	<i>Atheta castanoptera</i> , <i>A. crassicornis</i> , <i>Gyrophæna congrua</i> , <i>G. poweri</i> , <i>Lordithon thoracicus</i> [5]	I
	<i>Atheta castanoptera</i> , <i>A. crassicornis</i> , <i>A. nigritula</i> , <i>Autalia longicornis</i> , <i>Lordithon thoracicus</i> , <i>Oxypoda alternans</i> , <i>O. formosa</i> , <i>Proteinus brachypterus</i> [8]	II W
	<i>Anoplotrupes stercorosus</i> , <i>Anthobium melanocephalum</i> , <i>Apocatops nigrita</i> , <i>Atheta aeneipennis</i> , <i>A. britanniae</i> , <i>A. canescens</i> , <i>A. castanoptera</i> , <i>A. celata</i> , <i>A. crassicornis</i> , <i>A. dadopora</i> , <i>A. gagatina</i> , <i>A. liturata</i> , <i>A. marcida</i> , <i>A. nigritula</i> , <i>A. paracrassicornis</i> , <i>A. sodalis</i> , <i>Bryophacis crassicornis</i> , <i>Lordithon bimaculatus</i> , <i>L. exoletus</i> , <i>L. lunulatus</i> , <i>L. thoracicus</i> , <i>Megarthus depressus</i> , <i>M. hemipterus</i> , <i>M. nitidulus</i> , <i>Nicrophorus vespilloides</i> , <i>Omaliium rivulare</i> , <i>Ontholestes tessellatus</i> , <i>Oxypoda alternans</i> , <i>O. formosa</i> , <i>Philonthus marginatus</i> , <i>Proteinus brachypterus</i> , <i>P. crenulatus</i> , <i>Tachinus laticollis</i> , <i>T. pallipes</i> [34]	III W
<i>Lactarius pterosporus</i> ROMAGN.	<i>Gyrophæna bihamata</i> , <i>G. nana</i> , <i>Oxypoda alternans</i> [3]	II W
<i>Lactarius salmonicolor</i> R. HEIM & LECLAIR	<i>Lordithon exoletus</i> [1]	I
	<i>Gyrophæna bihamata</i> , <i>Oxypoda alternans</i> [2]	II W
<i>Lactarius scrobiculatus</i> (SCOP.) FR.	<i>Apocatops nigrita</i> , <i>Atheta britanniae</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>A. gagatina</i> , <i>A. marcida</i> , <i>A. nigritula</i> , <i>A. paracrassicornis</i> , <i>A. ravilla</i> , <i>A. sodalis</i> , <i>Autalia longicornis</i> , <i>Gyrophæna pulchella</i> , <i>Lordithon bimaculatus</i> , <i>L. exoletus</i> , <i>L. lunulatus</i> , <i>L. thoracicus</i> , <i>L. trimaculatus</i> , <i>Megarthus hemipterus</i> , <i>Omaliium rivulare</i> , <i>Oxypoda alternans</i> , <i>O. formosa</i> , <i>Proteinus brachypterus</i> , <i>P. crenulatus</i> , <i>P. laevigatus</i> [24]	III W
<i>Lactarius zonarioides</i> KÜHNER & ROMAGN.	<i>Atheta castanoptera</i> , <i>A. nigritula</i> , <i>Gyrophæna bihamata</i> [3]	III W
<i>Russula chloroides</i> (KROMBH.) BRES.	<i>Pterostichus burmeisteri</i> [1]	I
<i>Russula delica</i> FR.	<i>Philonthus addendus</i> [1]	III W
<i>Russula foetens</i> PERS.	<i>Oxypoda alternans</i> [1]	II W
<i>Russula nigricans</i> FR.	<i>Atheta canescens</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>A. dadopora</i> , <i>A. nigritula</i> , <i>A. paracrassicornis</i> , <i>Megarthus hemipterus</i> , <i>Proteinus brachypterus</i> , <i>P. laevigatus</i> [9]	III W
<i>Russula olivacea</i> (SCHAEFF.) FR.	<i>Atheta castanoptera</i> , <i>A. nigritula</i> [2]	I
	<i>Atheta crassicornis</i> , <i>Lordithon exoletus</i> , <i>Pocadius adustus</i> [3]	II W
	<i>Aleochara sparsa</i> , <i>Atheta castanoptera</i> , <i>A. celata</i> , <i>A. crassicornis</i> , <i>A. dadopora</i> , <i>A. fungicola</i> , <i>A. gagatina</i> , <i>A. nigritula</i> , <i>A. paleola</i> , <i>A. picipes</i> , <i>A. ravilla</i> , <i>A. sodalis</i> , <i>Lordithon bimaculatus</i> , <i>L. exoletus</i> , <i>L. lunulatus</i> , <i>Megarthus hemipterus</i> , <i>Proteinus laevigatus</i> , <i>Sciodrepoides watsoni</i> , <i>Tachinus pallipes</i> [19]	III W
<i>Hyphodontia spathulata</i> (SCHRAD.) PARMASIO	<i>Acrulia inflata</i> , <i>Agathidium bescidicum</i> , <i>Atheta pallidicornis</i> , <i>Cerylon histeroides</i> , <i>Scaphisoma agaricinum</i> , <i>Sepedophilus marshami</i> [6]	II W
Stereaceae		
<i>Stereum rugosum</i> PERS.	<i>Cis fusciclavis</i> [1]	III W
Strophariaceae		
<i>Hypholoma fasciculare</i> (HUDS.) P. KUMM.	<i>Gyrophæna poweri</i> [1]	I
	<i>Atheta britanniae</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>A. gagatina</i> , <i>Gyrophæna poweri</i> , <i>Lordithon lunulatus</i> , <i>L. thoracicus</i> , <i>Oxypoda alternans</i> , <i>Proteinus crenulatus</i> [9]	II W
	<i>Lordithon lunulatus</i> , <i>L. trinotatus</i> , <i>Oxypoda formosa</i> , <i>Proteinus brachypterus</i> [4]	III W
<i>Hypholoma sublateritium</i> (SCHAEFF.) QUÉL.	<i>Gyrophæna poweri</i> , <i>Oxypoda formosa</i> [2]	I

<i>Pholiota mutabilis</i> (SCHAEFF.) P. KUMM.	<i>Gyrophæna poweri</i> , <i>G. pulchella</i> , <i>Oxypoda formosa</i> , <i>Oxyporus maxillosus</i> [4]	I
	<i>Atheta fungicola</i> , <i>Cylloides ater</i> , <i>Gyrophæna affinis</i> , <i>G. bihamata</i> , <i>G. fasciata</i> , <i>G. manca</i> , <i>G. minima</i> , <i>G. poweri</i> , <i>G. williamsi</i> , <i>Oxypoda formosa</i> , <i>Oxyporus maxillosus</i> [11]	II W
	<i>Gyrophæna manca</i> , <i>G. minima</i> , <i>Oxypoda formosa</i> , <i>Oxyporus maxillosus</i> [4]	III D
<i>Pholiota limonella</i> (PECK) SACC.	<i>Rhizophagus dispar</i> [1]	III W
<i>Pholiota squarrosa</i> (WAHL) P. KUMM.	<i>Gyrophæna minima</i> , <i>Oxypoda formosa</i> [2]	I
	<i>Atheta britanniae</i> , <i>A. crassicornis</i> , <i>Autalia longicornis</i> , <i>Lordithon</i> <i>lunulatus</i> , <i>L. trimaculatus</i> , <i>Oxypoda alternans</i> , <i>O. formosa</i> , <i>Proteinus crenulatus</i> [8]	III W
<i>Pholiota squarrosoides</i> (PECK) SACC.	<i>Atheta britanniae</i> , <i>A. crassicornis</i> , <i>A. marcida</i> , <i>A. paracrassicornis</i> , <i>A. sodalis</i> , <i>Autalia longicornis</i> , <i>Lordithon</i> <i>trinotatus</i> , <i>Oxypoda alternans</i> , <i>Proteinus brachypterus</i> [9]	III W
<i>Tremella mesenterica</i> RETZ.	<i>Anthobium atrocephalum</i> , <i>Tetratoma ancora</i> [2]	II W
Tricholomataceae		
<i>Clitocybe nebularis</i> (BATSCH) P. KUMM.	<i>Gyrophæna pulchella</i> , <i>Oxypoda alternans</i> [2]	I
	<i>Atheta britanniae</i> , <i>A. castanoptera</i> , <i>A. marcida</i> , <i>A. paracrassicornis</i> , <i>A. sodalis</i> , <i>A. taxiceroides</i> , <i>Bolitochara</i> <i>obliqua</i> , <i>Gyrophæna pulchella</i> , <i>Lordithon bimaculatus</i> , <i>Oxypoda alternans</i> [10]	II W
	<i>Anthobium atrocephalum</i> , <i>Atheta britanniae</i> , <i>A. castanoptera</i> , <i>A. corvina</i> , <i>A. crassicornis</i> , <i>A. depressicollis</i> , <i>A. fungivora</i> , <i>A. marcida</i> , <i>A. nigritula</i> , <i>A. paracrassicornis</i> , <i>A. ravilla</i> , <i>A. sodalis</i> , <i>A. taxiceroides</i> , <i>Autalia longicornis</i> , <i>Gyrophæna</i> <i>affinis</i> , <i>G. gentilis</i> , <i>G. manca</i> , <i>G. minima</i> , <i>G. poweri</i> , <i>G. pulchella</i> , <i>Lordithon bimaculatus</i> , <i>L. exoletus</i> , <i>L. lunulatus</i> , <i>L. thoracicus</i> , <i>Megarthus depressus</i> , <i>Oxypoda alternans</i> , <i>O. formosa</i> , <i>Pocadius ferrugineus</i> , <i>Proteinus brachypterus</i> , <i>P. crenulatus</i> , <i>Quedius cruentus</i> , <i>Sericoderus lateralis</i> [32]	III W
<i>Clitocybe odora</i> (BULL.) P. KUMM.	<i>Gyrophæna poweri</i> , <i>G. pulchella</i> [2]	I
<i>Gymnopus confluens</i> (PERS.) ANTONIN, HALLING & NOORDEL.	<i>Gyrophæna affinis</i> , <i>G. rousi</i> , <i>Oxypoda annularis</i> [3]	I
<i>Gymnopus</i> sp.	<i>Atheta gagatina</i> , <i>Gyrophæna affinis</i> , <i>G. gentilis</i> , <i>G. minima</i> [4]	I
<i>Hydropus atramentosus</i> (KALCHBR.) KOTL. & POUZAR	<i>Bolitochara obliqua</i> [1]	III W
<i>Hygrophorus agathosmus</i> (FR.) FR.	<i>Atheta crassicornis</i> , <i>A. marcida</i> , <i>A. sodalis</i> , <i>Lordithon thoracicus</i> , <i>Oxypoda formosa</i> , <i>Proteinus crenulatus</i> [6]	III W
<i>Hygrophorus pudorinus</i> (FR.) FR.	<i>Anthobium melanocephalum</i> , <i>Atheta aeneipennis</i> , <i>A. castanoptera</i> , <i>A. crassicornis</i> , <i>A. nigritula</i> , <i>A. sodalis</i> , <i>Lordithon bimaculatus</i> , <i>Oxypoda alternans</i> , <i>Proteinus</i> <i>brachypterus</i> , <i>P. crenulatus</i> , <i>P. ovalis</i> [11]	III W
<i>Lepista nuda</i> (BULL.) COOKE	<i>Aplocnemus nigricornis</i> , <i>Atheta sodalis</i> , <i>Lordithon lunulatus</i> , <i>Oxypoda alternans</i> [4]	I
	<i>Atheta crassicornis</i> , <i>Omaliium rivulare</i> , <i>Oxypoda flavicornis</i> , <i>O. formosa</i> , <i>O. haemorrhoea</i> [5]	III W
<i>Leucocybe connata</i> (SCHUMACH.) VIZZINI, P. ALVARADO, G. MORENO & CONSIGLIO	<i>Gyrophæna fasciata</i> , <i>G. nana</i> , <i>G. poweri</i> , <i>Lordithon thoracicus</i> [4]	II W
<i>Megacollybia platyphylla</i> (PERS.) KOTL. & POUZAR	<i>Aulonothroscus brevicollis</i> , <i>Lordithon thoracicus</i> [2]	I
	<i>Gyrophæna affinis</i> , <i>G. gentilis</i> , <i>G. manca</i> , <i>Lordithon lunulatus</i> , <i>L. thoracicus</i> , <i>Oxypoda formosa</i> , <i>Pteryngium crenatum</i> [7]	II W
	<i>Atheta crassicornis</i> , <i>A. paracrassicornis</i> , <i>Gyrophæna gentilis</i> , <i>Lordithon bimaculatus</i> , <i>L. thoracicus</i> , <i>Oxypoda arborea</i> ,	III W

	<i>O. formosa</i> [7]	
<i>Mycena galericulata</i> (SCOP.) GRAY	<i>Gyrophæna affinis</i> , <i>G. gentilis</i> , <i>G. nana</i> [3]	I
<i>Mycena renati</i> QUÉL.	<i>Gyrophæna fasciata</i> , <i>G. gentilis</i> , <i>G. joyi</i> , <i>G. poweri</i> , <i>Lordithon thoracicus</i> , <i>Oxypoda formosa</i> [6]	I
<i>Mycena rosea</i> GRAMBERG	<i>Gyrophæna congrua</i> , <i>G. fasciata</i> , <i>G. joyi</i> , <i>G. poweri</i> , <i>G. pulchella</i> , <i>Lordithon exoletus</i> , <i>L. lunulatus</i> [7]	I
	<i>Atheta crassicornis</i> , <i>A. gagatina</i> , <i>Carphacis striatus</i> , <i>Gyrophæna affinis</i> , <i>G. congrua</i> , <i>G. poweri</i> , <i>G. pulchella</i> , <i>Lordithon bimaculatus</i> , <i>Nargus anisotomoides</i> , <i>Oxypoda alternans</i> , <i>Proteinus brachypterus</i> [11]	II W
<i>Mycena viridimarginata</i> P. KARST.	<i>Gyrophæna gentilis</i> , <i>Rhizophagus dispar</i> [2]	I
<i>Mycena zephrus</i> (FR.) P. KUMM.	<i>Atheta castanoptera</i> , <i>A. crassicornis</i> , <i>Lordithon exoletus</i> , <i>Quedius xanthopus</i> [4]	III W
<i>Paralepista flaccida</i> (SOWERBY) VIZZINI	<i>Atheta corvina</i> , <i>A. crassicornis</i> , <i>A. sodalis</i> [3]	III W
<i>Tricholoma aurantium</i> (SCHAEFF.) RICKEN	<i>Atheta nigrifulva</i> , <i>A. pallidicornis</i> , <i>Gyrophæna pulchella</i> , <i>Oxypoda arborea</i> , <i>O. formosa</i> , <i>Proteinus crenulatus</i> [6]	II W
<i>Tricholoma equestre</i> var. <i>populinum</i> MORT. CHR. & NOORDEL.	<i>Atheta crassicornis</i> , <i>Cychramus luteus</i> , <i>C. variegatus</i> , <i>Gyrophæna gentilis</i> , <i>G. pulchella</i> , <i>Lordithon lunulatus</i> , <i>L. trinotatus</i> , <i>Oxypoda formosa</i> [8]	II W
<i>Tricholoma fulvum</i> (DC.) BIGEARD & GUILL.	<i>Gyrophæna pulchella</i> , <i>Lordithon trinotatus</i> [2]	II W
	<i>Gyrophæna fasciata</i> , <i>G. pulchella</i> , <i>Lordithon bimaculatus</i> , <i>Oxypoda alternans</i> , <i>Proteinus brachypterus</i> [5]	III W
<i>Tricholoma orirubens</i> QUÉL.	<i>Atheta britanniae</i> , <i>A. castanoptera</i> , <i>Lordithon bimaculatus</i> , <i>Proteinus crenulatus</i> [4]	III W
<i>Tricholoma saponaceum</i> (FR.) P. KUMM.	<i>Atheta marcida</i> , <i>Autalia longicornis</i> , <i>Oxypoda formosa</i> , <i>Proteinus brachypterus</i> [4]	III W
<i>Tricholoma sejunctum</i> (SOWERBY.) QUÉL.	<i>Gyrophæna manca</i> , <i>G. pulchella</i> , <i>G. poweri</i> , <i>G. pulchella</i> [4]	I
	<i>Gyrophæna williamsi</i> , <i>Oxypoda alternans</i> [2]	III W
<i>Tricholomopsis rutilans</i> (SCHAEFF.) SINGER	<i>Gyrophæna minima</i> , <i>G. poweri</i> , <i>G. pulchella</i> , <i>G. williamsi</i> [4]	III W

Beetles (Coleoptera)

A total of 197 samples were collected, including 9665 specimens and 149 species of beetles (mean 49.06 specimens and 4.52 species per sample). The most numerous sample, collected in the Ociemny Potok valley on a group of fruiting bodies of *Pholiota mutabilis* (decomposition stage II W), contained 795 specimens and 5 species of beetles. Another remarkable sample was collected in the vicinity of the PNP's administration building, also from a group of basidiocarps of *Pholiota mutabilis* (likewise in decomposition stage II W). This sample included 754 specimens of 6 beetle species. Only a single beetle was collected in 26 samples (13.2%), and only a single species was collected in 31 samples (15.7%). Only four samples (2%) contained more than 500 specimens of beetles. Three samples (1.5%) contained 200-299 specimens of beetles, 20 samples (10.2%) contained 100-199 specimens, and 170 samples (86.3%) contained less than 99 specimens. 15 or more species of beetles were recorded in five (2.5%) samples, 10-14 – in 20 (10.2%) samples, 5-9 – in 50 (25.4%) samples, and four or fewer in 122 (61.9%) samples.

The species-richest sample was found on the edge of a clearing in the Wielka Dolina, where 517 specimens and 17 species of beetles were collected on a few basidiocarps of *Clitocybe nebularis*.

The present paper reports on the interactions of 103 species of fungi and 149 species of beetles (Table 3). We found 9665 adult beetles, members of 22 families. All of them were identified to species level. Most individuals – 7565 (78%) – were collected from fruiting bodies of agaricoid fungi.

The most numerous family of beetles was Staphylinidae, with 103 species (9479 individuals, 98% of all specimens) inhabiting 92 species (89.3%) of fungi. Leiodidae, Nitidulidae and Mycetophagidae were subdominant families (with 8, 6 and 5 species respectively), and 11 families were represented by just a single species (Tables 3, 4). Out of 149 species of beetles, over 30% (49 taxa) were found in the study area for the first time, and many of these species are rare both nationwide and in Europe. The most interesting findings (Fig. 2) were *Atheta depressicollis*, recorded for the first time in Poland, and *Gyrophæna rousi*, which was found in a second

locality in Poland (the first one was also found during our studies in the PNP, CHACHUŁA et al. 2018, 2019). The following taxa are interesting owing to their rarity and the little information available on their distribution and biology: Cryptophagidae: *Pteryngium crenatum*, Erotylidae: *Triplax rufipes*, Leiodidae: *Agathidium bescidicum*, *A. pisanum*, *Colenis immunda*, Mycetophagidae: *Mycetophagus ater*, Staphylinidae: *Acrulia inflata*, *Agaricochara latissima*, *Atheta amicula*, *A. fungivora*, *A. liturata*, *A. taxiceroides*, *Autalia longicornis*, *Gyrophaga congrua*, *G. polita*,

G. williamsi, *Lordithon trimaculatus*, *Megarthus hemipterus*, *Ontholestes haroldi*, *Oxypoda arborea*, *Proteinus crenulatus*, *Scaphisoma boreale*. Four species of beetles are included in the Polish Red List of Animals (PAWŁOWSKI et al. 2002): *Agathidium bescidicum* – CR, *Omalius septentrionis* and *Mycetophagus ater* – EN, *Acrulia inflata* – VU. We also recorded species that are relicts of a natural forest: *Acrulia inflata*, *Lordithon trimaculatus*, and *Mycetophagus ater* (BURAKOWSKI et al. 1986, SZUJECKI 2017).

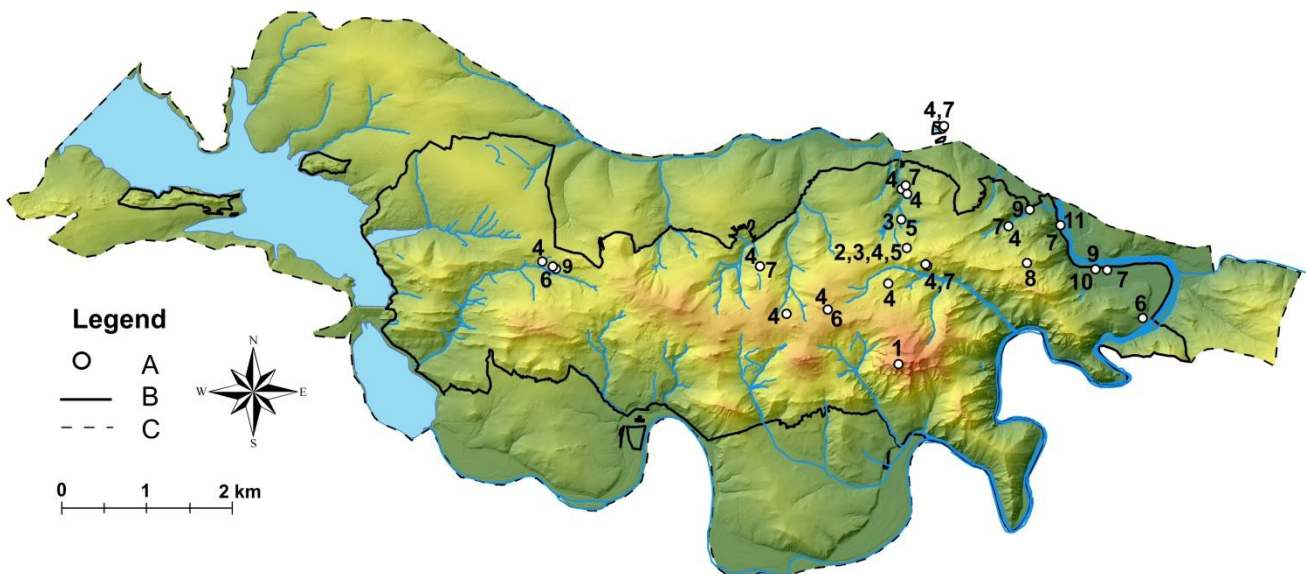


Fig. 2. Localities of rare and endangered beetle species recorded during the survey. Legend: A – locations of study sites, B – border of the national park, C – buffer zone of the national park, 1 – *Agathidium bescidicum*, 2 – *Atheta depressicollis*, 3 – *Atheta fungivora*, 4 – *Autalia longicornis*, 5 – *Atheta taxiceroides*, 6 – *Gyrophaga rousi*, 7 – *Lordithon trimaculatus*, 8 – *Mycetophagus ater*, 9 – *Omalius septentrionis*, 10 – *Ontholestes haroldi*, 11 – *Scaphisoma boreale*.

Ryc. 2. Stanowiska rzadkich i zagrożonych gatunków chrząszczy stwierdzonych w czasie badań. Oznaczenia: A – lokalizacja stanowisk badawczych, B – granica parku narodowego, C – otulina parku narodowego.

Table 3. List of beetles and fungi on which beetles were collected. The symbols in the “Comments” column refer to species of Coleoptera: MB – mycetobiont, * – first record in the Pieniny Mts., ! – first record in Poland

Tabela 3. Lista chrząszczy oraz grzybów, z których zebrano chrząszcze. Oznaczenia w kolumnie „Uwagi” odnoszą się do gatunków chrząszczy: MB – mycetobiont, * – nowy dla Pienin, ! – nowy dla Polski.

Coleoptera	Fungi [number of specimens of beetles collected on particular species] Grzyby [licznia osobników chrząszczy zebranych na danym gatunku]	Comments Uwagi
Carabidae [number of species: 2]		
<i>Notiophilus aquaticus</i> (LINNAEUS, 1758)	<i>Peziza vesiculosa</i> [1]	*
<i>Pterostichus burmeisteri</i> HEER, 1838	<i>Russula chloroides</i> [1]	*
Hydrophilidae [1]		
<i>Megasternum concinnum</i> (MARSHAM, 1802)	<i>Peziza vesiculosa</i> [8]	
Leiodidae [8]		
<i>Agathidium bescidicum</i> REITTER, 1885	<i>Hyphodontia spathulata</i> [2]	*
<i>Agathidium nigripenne</i> (FABRICIUS, 1792)	<i>Hericium flagellum</i> [2], <i>Peziza micropus</i> [2]	*
<i>Agathidium pisanum</i> BRISOUT, 1872	<i>Pleurotus pulmonarius</i> [2]	
<i>Apocatops nigrita</i> (ERICHSON, 1837)	<i>Ramaria flava</i> [1], <i>Lactarius scrobiculatus</i> [1], <i>L. piperatus</i> [1], <i>Morchella esculenta</i> [1]	*
<i>Colenis immunda</i> (STURM, 1807)	<i>Peziza vesiculosa</i> [1]	
<i>Nargus anisotomoides</i> (SPENCE, 1813)	<i>Mycena rosea</i> [1]	*
<i>Sciodrepoides fumatus</i> (SPENCE, 1813)	<i>Phallus impudicus</i> [1]	
<i>Sciodrepoides watsoni</i> (SPENCE, 1913)	<i>Russula olivacea</i> [1], <i>Coprinellus disseminatus</i> [1]	
Silphidae [2]		
<i>Nicrophorus vespilloides</i> HERBST, 1783	<i>Lactarius piperatus</i> [1]	
<i>Oiceoptoma thoracicum</i> (LINNAEUS, 1758)	<i>Phallus impudicus</i> [1]	*
Staphylinidae [103]		
<i>Acrulia inflata</i> (GYLLENHAL, 1813)	<i>Hyphodontia spathulata</i> [1], <i>Pleurotus pulmonarius</i> [1]	
<i>Agaricochara latissima</i> (STEPHENS, 1832)	<i>Schizopora paradoxa</i> [1]	MB
<i>Aleochara fumata</i> GRAVENHORST, 1802	<i>Chlorophyllum rhacodes</i> [1], <i>Morchella esculenta</i> [1], <i>Pleurotus pulmonarius</i> [1], <i>Suillellus luridus</i> [1]	*
<i>Aleochara sparsa</i> HEER, 1839	<i>Russula olivacea</i> [1]	*
<i>Anotylus sculpturatus</i> (GRAVENHORST, 1806)	<i>Psathyrella candolleana</i> [1]	
<i>Anthobium atrocephalum</i> (GYLLENHAL, 1827)	<i>Armillaria lutea</i> [1], <i>Clitocybe nebularis</i> [1], <i>Flammulina velutipes</i> [1], <i>Tremella mesenterica</i> [1]	*
<i>Anthobium melanocephalum</i> (ILLIGER, 1794)	<i>Hygrophorus pudorinus</i> [4], <i>Lactarius piperatus</i> [5]	*
<i>Atheta aeneicollis</i> (SHARP, 1869)	<i>Boletus luridiformis</i> var. <i>luridiformis</i> [1]	
<i>Atheta aeneipennis</i> (THOMSON, 1856)	<i>Hygrophorus pudorinus</i> [5], <i>Lactarius piperatus</i> [4]	
<i>Atheta amicula</i> (STEPHENS, 1832)	<i>Chlorophyllum rhacodes</i> [3]	*
<i>Atheta britanniae</i> BERNHAUER & SCHEERPELTZ, 1926	<i>Amanita muscaria</i> [2], <i>Boletus luridiformis</i> var. <i>luridiformis</i> [6], <i>Clitocybe nebularis</i> [36], <i>Craterellus cornucopioides</i> [6], <i>Echinoderma asperum</i> [1], <i>Hydnum repandum</i> [1], <i>Hypholoma fasciculare</i> [1], <i>Lactarius piperatus</i> [3], <i>L. scrobiculatus</i> [1], <i>Phallus impudicus</i> [6], <i>Pholiota squarrosa</i> [2], <i>P. squarrosoides</i> [5], <i>Russula olivacea</i> [2], <i>Tricholoma orirubens</i> [4]	
<i>Atheta canescens</i> (SHARP, 1869)	<i>Lactarius piperatus</i> [1], <i>Russula nigricans</i> [1]	*
<i>Atheta castanoptera</i> (MANNERHEIM, 1830)	<i>Agaricus augustus</i> [2], <i>Amanita muscaria</i> [8], <i>A. rubescens</i> [56], <i>Boletus luridiformis</i> var. <i>luridiformis</i> [15], <i>B. reticulatus</i> [45], <i>Caloboletus calopus</i> [3], <i>Chlorophyllum rhacodes</i> [19], <i>Clitocybe</i>	

	<i>nebularis</i> [58], <i>Entoloma clypeatum</i> [4], <i>Flammulina velutipes</i> [1], <i>Hydnum repandum</i> [32], <i>Hygrophorus pudorinus</i> [8], <i>Hypholoma fasciculare</i> [10], <i>Lacrymaria lacrymabunda</i> [20], <i>Lactarius piperatus</i> [142], <i>L. scrobiculatus</i> [49], <i>L. zonarioides</i> [6], <i>Mycena zephirus</i> [1], <i>Paxillus rubicundulus</i> [6], <i>Peziza vesiculosa</i> [5], <i>Phallus impudicus</i> [5], <i>Pleurotus pulmonarius</i> [81], <i>Russula nigricans</i> [13], <i>R. olivacea</i> [49], <i>Suillellus luridus</i> [14], <i>Tricholoma orirubens</i> [2]	
<i>Atheta cauta</i> (ERICHSON, 1837)	<i>Pleurotus pulmonarius</i> [2]	*
<i>Atheta celata</i> (ERICHSON, 1837)	<i>Amanita rubescens</i> [2], <i>Clitopilus prunulus</i> [1], <i>Lactarius piperatus</i> [23], <i>Russula olivacea</i> [4]	
<i>Atheta coriaria</i> (KRAATZ, 1856)	<i>Pleurotus pulmonarius</i> [5]	*
<i>Atheta corvina</i> (THOMSON, 1856)	<i>Clitocybe nebularis</i> [1], <i>Craterellus cornucopioides</i> [3], <i>Flammulina velutipes</i> [1], <i>Paralepista flaccida</i> [1], <i>Suillellus luridus</i> [1]	
<i>Atheta crassicornis</i> (FABRICIUS, 1793)	<i>Agaricus augustus</i> [2], <i>Amanita muscaria</i> [3], <i>A. rubescens</i> [6], <i>Armillaria lutea</i> [1], <i>Boletus luridiformis</i> var. <i>luridiformis</i> [6], <i>B. reticulatus</i> [4], <i>Chlorophyllum rhacodes</i> [67], <i>Clitocybe nebularis</i> [85], <i>Clitopilus prunulus</i> [1], <i>Echinoderma asperum</i> [3], <i>Entoloma clypeatum</i> [26], <i>Flammulina velutipes</i> [10], <i>Hydnum repandum</i> [56], <i>Hygrophorus agathosmus</i> [3], <i>H. pudorinus</i> [4], <i>Hypholoma fasciculare</i> [4], <i>Lacrymaria lacrymabunda</i> [3], <i>Lactarius piperatus</i> [128], <i>L. scrobiculatus</i> [28], <i>Lentinellus ursinus</i> [10], <i>Lepista nuda</i> [4], <i>Megacollybia platyphylla</i> [1], <i>Morchella esculenta</i> [47], <i>Mycena rosea</i> [4], <i>M. zephirus</i> [4], <i>Paralepista flaccida</i> [3], <i>Paxillus rubicundulus</i> [8], <i>Peziza vesiculosa</i> [12], <i>Phallus impudicus</i> [12], <i>Pholiota squarrosa</i> [8], <i>P. squarrosoides</i> [2], <i>Pleurotus pulmonarius</i> [29], <i>Russula nigricans</i> [16], <i>R. olivacea</i> [26], <i>Suillellus luridus</i> [4], <i>Tricholoma equestre</i> var. <i>populinum</i> [1], <i>Volvopluteus gloiocephalus</i> [1]	
<i>Atheta dadopora</i> (THOMSON, 1867)	<i>Boletus luridiformis</i> var. <i>luridiformis</i> [9], <i>B. reticulatus</i> [1], <i>Chlorophyllum rhacodes</i> [5], <i>Entoloma clypeatum</i> [1], <i>Hydnum repandum</i> [4], <i>Lactarius piperatus</i> [9], <i>L. piperatus</i> [4], <i>Pleurotus pulmonarius</i> [18], <i>Russula nigricans</i> [1], <i>R. olivacea</i> [12]	
<i>Atheta depressicollis</i> FAUVEL, 1875	<i>Clitocybe nebularis</i> [1]	!, *
<i>Atheta euryptera</i> (STEPHENS, 1832)	<i>Porphyrellus porphyrosporus</i> [1]	
<i>Atheta fungicola</i> (THOMSON, 1852)	<i>Amanita rubescens</i> -[1], <i>Echinoderma asperum</i> [1], <i>Phallus impudicus</i> [1], <i>Pholiota mutabilis</i> [1], <i>Russula olivacea</i> [4]	
<i>Atheta fungivora</i> (THOMSON, 1867)	<i>Clitocybe nebularis</i> [1], <i>Flammulina velutipes</i> [2]	*
<i>Atheta gogatina</i> (BAUDI, 1848)	<i>Amanita muscaria</i> [1], <i>Craterellus cornucopioides</i> [1], <i>Entoloma clypeatum</i> [3], <i>Gymnopus</i> sp. [1], <i>Hypholoma fasciculare</i> [1], <i>Lactarius piperatus</i> [5], <i>L. scrobiculatus</i> [7], <i>Mycena rosea</i> [1], <i>Paxillus rubicundulus</i> [1], <i>Russula olivacea</i> [3], <i>Tapinella atrotomentosa</i> [1], <i>Xerocomus pascuus</i> [1]	
<i>Atheta laticollis</i> (STEPHENS, 1832)	<i>Armillaria lutea</i> [1]	
<i>Atheta liturata</i> (STEPHENS, 1832)	<i>Lactarius piperatus</i> [2]	
<i>Atheta marcida</i> (ERICHSON, 1837)	<i>Amanita muscaria</i> [1], <i>Clitocybe nebularis</i> [31], <i>Flammulina velutipes</i> [1], <i>Hydnum repandum</i> [25], <i>Hygrophorus agathosmus</i> [6], <i>Lacrymaria lacrymabunda</i> [44], <i>Lactarius piperatus</i> [29], <i>L. scrobiculatus</i> [2], <i>Lentinellus ursinus</i> [1], <i>Phallus impudicus</i> [24], <i>Pholiota squarrosoides</i> [12], <i>Pleurotus pulmonarius</i> [1], <i>Tricholoma saponaceum</i> [1]	
<i>Atheta nigra</i> (KRAATZ, 1856)	<i>Peziza vesiculosa</i> [1]	
<i>Atheta nigritula</i> (GRAVENHORST, 1802)	<i>Amanita muscaria</i> [2], <i>A. rubescens</i> [40], <i>Boletus reticulatus</i> [3], <i>Clitocybe nebularis</i> [5], <i>Hydnum repandum</i> [6], <i>Hygrophorus pudorinus</i> [7], <i>Lactarius piperatus</i> [72], <i>L. scrobiculatus</i> [18], <i>L. zonarioides</i> [4], <i>Lentinellus ursinus</i> [2], <i>Morchella esculenta</i> [2],	

	<i>Russula nigricans</i> [3], <i>R. olivacea</i> [36], <i>Tricholoma aurantium</i> [2]	
<i>Atheta orbata</i> (ERICHSON, 1837)	<i>Peziza arvernensis</i> [1]	*
<i>Atheta palleola</i> (ERICHSON, 1837)	<i>Paxillus rubicundulus</i> [2], <i>Russula olivacea</i> [1]	*
<i>Atheta pallidicornis</i> (THOMSON C.G., 1856)	<i>Boletus luridiformis</i> var. <i>luridiformis</i> [3], <i>Tricholoma aurantium</i> [1], <i>Hyphodontia spathulata</i> [1]	
<i>Atheta paracrassicornis</i> BRUNDIN, 1954	<i>Amanita rubescens</i> [6], <i>Boletus reticulatus</i> [10], <i>Caloboletus calopus</i> [5], <i>Clitocybe nebularis</i> [15], <i>Flammulina velutipes</i> [5], <i>Hydnum repandum</i> [11], <i>Lactarius piperatus</i> [9], <i>L. scrobiculatus</i> [9], <i>Lentinellus ursinus</i> [5], <i>Megacollybia platyphylla</i> [1], <i>Pholiota squarrosoides</i> [9], <i>Russula nigricans</i> [1], <i>Suillellus luridus</i> [3], <i>Xerocomus pascuus</i> [1]	
<i>Atheta picipes</i> (THOMSON, 1856)	<i>Boletus luridiformis</i> var. <i>luridiformis</i> [1], <i>Chlorophyllum rhacodes</i> [4], <i>Craterellus cornucopioides</i> [2], <i>Lacrymaria lacrymabunda</i> [2], <i>Pleurotus pulmonarius</i> [17], <i>Russula olivacea</i> [2]	
<i>Atheta ravilla</i> (ERICHSON, 1839)	<i>Amanita muscaria</i> [1], <i>Boletus luridiformis</i> var. <i>luridiformis</i> [1], <i>Chlorophyllum rhacodes</i> [2], <i>Clitocybe nebularis</i> [2], <i>Flammulina velutipes</i> [1], <i>Lacrymaria lacrymabunda</i> [1], <i>Lactarius scrobiculatus</i> [2], <i>Pleurotus pulmonarius</i> [6], <i>Russula olivacea</i> [1]	
<i>Atheta sodalis</i> (ERICHSON, 1837)	<i>Amanita rubescens</i> [1], <i>Boletus luridiformis</i> var. <i>luridiformis</i> [6], <i>Chlorophyllum rhacodes</i> [5], <i>Clitocybe nebularis</i> [25], <i>Craterellus cornucopioides</i> [4], <i>Hydnum repandum</i> [4], <i>Hygrophorus agathosmus</i> [10], <i>Hygrophorus pudorinus</i> [3], <i>Lacrymaria lacrymabunda</i> [2], <i>Lactarius piperatus</i> [7], <i>L. scrobiculatus</i> [1], <i>Lepista nuda</i> [1], <i>Paralepista flaccida</i> [1], <i>Phallus impudicus</i> [5], <i>Pholiota squarrosoides</i> [2], <i>Pleurotus pulmonarius</i> [5], <i>Russula olivacea</i> [3], <i>Suillellus luridus</i> [1]	
<i>Atheta subtilis</i> (SCRIBA, 1866)	<i>Amanita rubescens</i> [2]	
<i>Atheta taxiceroides</i> MÜNSTER, 1932	<i>Clitocybe nebularis</i> [2], <i>Flammulina velutipes</i> [2]	
<i>Autalia longicornis</i> SCHEERPELTZ, 1947	<i>Clitocybe nebularis</i> [1], <i>Echinoderma asperum</i> [2], <i>Lacrymaria lacrymabunda</i> [3], <i>Hydnum repandum</i> [10], <i>Lactarius piperatus</i> [2], <i>L. scrobiculatus</i> [1], <i>Pholiota squarrosa</i> [1], <i>P. squarrosoides</i> [1], <i>Pleurotus pulmonarius</i> [8], <i>Tricholoma saponaceum</i> [4]	
<i>Bisnius fimetarius</i> (GRAVENHORST, 1802)	<i>Peziza vesiculosa</i> [4], <i>Pleurotus pulmonarius</i> [4]	
<i>Bolitochara obliqua</i> ERICHSON, 1837	<i>Clitocybe nebularis</i> [1], <i>Flammulina velutipes</i> [1], <i>Hydropus atramentosus</i> [1], <i>Pleurotus pulmonarius</i> [3]	
<i>Bryophacis crassicornis</i> (MÄKLIN, 1847)	<i>Amanita rubescens</i> [3], <i>Lactarius piperatus</i> [2]	*
<i>Carphacis striatus</i> (OLIVIER, 1795)	<i>Chlorophyllum rhacodes</i> [1], <i>Mycena rosea</i> [1]	*
<i>Gyrophæna affinis</i> MANNERHEIM, 1830	<i>Amanita rubescens</i> [1], <i>Clitocybe nebularis</i> [82], <i>Coprinellus disseminatus</i> [2], <i>Crepidotus mollis</i> [8], <i>Gerronema strombodes</i> [1], <i>Gymnopus confluens</i> [19], <i>Gymnopus</i> sp. [13], <i>Marasmius oreades</i> [37], <i>Megacollybia platyphylla</i> [24], <i>Mycena galericulata</i> [3], <i>M. rosea</i> [4], <i>Paxillus rubicundulus</i> [92], <i>Pholiota mutabilis</i> [29], <i>Pleurotus pulmonarius</i> [122], <i>Pluteus cervinus</i> [33], <i>P. salicinus</i> [6], <i>Psathyrella candolleana</i> [6], <i>Volvopluteus gloiocephalus</i> [1]	MB
<i>Gyrophæna bihamata</i> THOMSON, 1867	<i>Amanita rubescens</i> [1], <i>Armillaria lutea</i> [1], <i>Entoloma clypeatum</i> [2], <i>Lactarius piperatus</i> [7], <i>L. zonarioides</i> [1], <i>Pholiota mutabilis</i> [4], <i>Volvopluteus gloiocephalus</i> [7]	MB
<i>Gyrophæna boleti</i> (LINNAEUS, 1758)	<i>Hymenopellis radicata</i> [1]	MB
<i>Gyrophæna congrua</i> ERICHSON, 1837	<i>Lactarius piperatus</i> [7], <i>Mycena rosea</i> [43]	*, MB
<i>Gyrophæna fasciata</i> (MARSHAM, 1802)	<i>Armillaria lutea</i> [30], <i>Coprinellus disseminatus</i> [8], <i>Crepidotus mollis</i> [10], <i>Echinoderma asperum</i> [423], <i>Entoloma clypeatum</i> [17], <i>Gerronema strombodes</i> [96], <i>Leucocybe connata</i> [97], <i>Mycena renati</i> [3], <i>M. rosea</i> [3], <i>Paxillus rubicundulus</i> [45], <i>Pholiota mutabilis</i> [1331], <i>Pleurotus pulmonarius</i> [3], <i>Pluteus salicinus</i> [11], <i>Psathyrella candolleana</i> [75],	MB

	<i>Tricholoma fulvum</i> [3], <i>Volvopluteus gloiocephalus</i> [94]	
<i>Gyrophæna gentilis</i> ERICHSON, 1839	<i>Amanita rubescens</i> [1], <i>Armillaria lutea</i> [4], <i>Clitocybe nebularis</i> [3], <i>Crepidotus mollis</i> [3], <i>Gymnopus</i> sp. [3], <i>Megacollybia platyphylla</i> [61], <i>Mycena galericulata</i> [9], <i>M. renati</i> [229], <i>M. viridimarginata</i> [1], <i>Mycetinis alliaceus</i> [11], <i>Pleurotus pulmonarius</i> [1], <i>Pluteus cervinus</i> [6], <i>P. salicinus</i> [13], <i>Tricholoma equestre</i> var. <i>populinum</i> [2]	MB
<i>Gyrophæna joyi</i> WENDELER, 1924	<i>Armillaria lutea</i> [2], <i>Auricularia auricula judae</i> [2], <i>Crepidotus mollis</i> [25], <i>Mycena renati</i> [32], <i>M. rosea</i> [6]	MB
<i>Gyrophæna joyioides</i> WÜSTHOFF, 1937	<i>Entoloma clypeatum</i> [4], <i>Inocybe splendens</i> [3]	*, MB
<i>Gyrophæna manca</i> ERICHSON, 1839	<i>Clitocybe nebularis</i> [46], <i>Crepidotus applanatus</i> [2], <i>Echinoderma asperum</i> [4], <i>Gerronema strombodes</i> [1], <i>Megacollybia platyphylla</i> [20], <i>Pholiota mutabilis</i> [12], <i>Tricholoma sejunctum</i> [1]	MB
<i>Gyrophæna minima</i> ERICHSON, 1837	<i>Clitocybe nebularis</i> [35], <i>Gerronema strombodes</i> [3], <i>Gymnopus</i> sp. [2], <i>Paxillus rubicundulus</i> [2], <i>Pluteus salicinus</i> [139], <i>Pholiota mutabilis</i> [104], <i>P. squarrosa</i> [1], <i>Rhodocollybia maculata</i> [2], <i>Tricholomopsis rutilans</i> [2], <i>Volvopluteus gloiocephalus</i> [2]	MB
<i>Gyrophæna nana</i> (PAYKULL, 1800)	<i>Echinoderma asperum</i> [4], <i>Entoloma clypeatum</i> [6], <i>Lactarius pterosporus</i> [1], <i>Leucocybe connata</i> [2], <i>Mycena galericulata</i> [1], <i>Pluteus cervinus</i> [1], <i>Psathyrella candolleana</i> [2]	MB
<i>Gyrophæna polita</i> (GRAVENHORST, 1802)	<i>Entoloma clypeatum</i> [1]	*, MB
<i>Gyrophæna poweri</i> CROTH, 1867	<i>Amanita muscaria</i> [1], <i>Armillaria lutea</i> [1], <i>Boletus luridiformis</i> var. <i>luridiformis</i> [1], <i>Clitocybe nebularis</i> [17], <i>C. odora</i> [6], <i>Entoloma clypeatum</i> [4], <i>Gerronema strombodes</i> [8], <i>Hebeloma sinapizans</i> [16], <i>Hypholoma fasciculare</i> [16], <i>H. sublateritium</i> [35], <i>Lactarius piperatus</i> [3], <i>L. salmonicolor</i> [3], <i>Leucocybe connata</i> [1], <i>Mycena renati</i> [4], <i>M. rosea</i> [35], <i>Paxillus rubicundulus</i> [59], <i>Pholiota mutabilis</i> [278], <i>Pleurotus pulmonarius</i> [28], <i>Pluteus cervinus</i> [30], <i>P. salicinus</i> [54], <i>Tricholoma sejunctum</i> [2], <i>Tricholomopsis rutilans</i> [14]	MB
<i>Gyrophæna pulchella</i> HEER, 1839	<i>Armillaria lutea</i> [28], <i>Clitocybe nebularis</i> [79], <i>Clitocybe odora</i> [75], <i>Coprinellus disseminatus</i> [1], <i>Gerronema strombodes</i> [175], <i>Lactarius scrobiculatus</i> [1], <i>Mycena rosea</i> [555], <i>Pholiota mutabilis</i> [1], <i>Sarcodon imbricatus</i> [2], <i>Tricholoma aurantium</i> [14], <i>T. equestre</i> var. <i>populinum</i> [1], <i>T. fulvum</i> [134], <i>T. sejunctum</i> [289], <i>Tricholomopsis rutilans</i> [26]	MB
<i>Gyrophæna rousi</i> DVOŘAK, 1966	<i>Entoloma clypeatum</i> [4], <i>Gymnopus confluens</i> [7], <i>Pluteus salicinus</i> [1]	MB
<i>Gyrophæna strictula</i> ERICHSON, 1839	<i>Pluteus salicinus</i> [2]	MB
<i>Gyrophæna williamsi</i> STRAND, 1935	<i>Pholiota mutabilis</i> [14], <i>Tricholomopsis rutilans</i> [108], <i>Tricholoma sejunctum</i> [11]	*, MB
<i>Leptusa fumida</i> (ERICHSON, 1839)	<i>Flammulina velutipes</i> [1], <i>Peziza micropus</i> [1]	
<i>Lordithon bimaculatus</i> (SCHRANK, 1798)	<i>Amanita muscaria</i> [2], <i>A. rubescens</i> [4], <i>Boletus luridiformis</i> var. <i>luridiformis</i> [2], <i>Chlorophyllum rhacodes</i> [6], <i>Clitocybe nebularis</i> [3], <i>Hygrophorus pudorinus</i> [2], <i>Lactarius piperatus</i> [1], <i>L. scrobiculatus</i> [6], <i>Megacollybia platyphylla</i> [6], <i>Morchella esculenta</i> [5], <i>Mycena rosea</i> [2], <i>Porphyrellus porphyrosporus</i> [1], <i>Rhodocollybia maculata</i> [2], <i>Russula olivacea</i> [3], <i>Tricholoma fulvum</i> [2], <i>T. orirubens</i> [2], <i>Volvopluteus gloiocephalus</i> [14]	
<i>Lordithon exoletus</i> (ERICHSON, 1839)	<i>Amanita muscaria</i> [1], <i>Amanita rubescens</i> [13], <i>Boletus reticulatus</i> [1], <i>Clitocybe nebularis</i> [8], <i>Coprinellus disseminatus</i> [5], <i>Hydnum repandum</i> [2], <i>Lactarius piperatus</i> [1], <i>L. salmonicolor</i> [2], <i>L. scrobiculatus</i> [1], <i>Mycena rosea</i> [1], <i>M. zephirus</i> [1], <i>Rhodocollybia maculata</i> [1], <i>Russula olivacea</i> [4]	
<i>Lordithon lunulatus</i> (LINNAEUS, 1760)	<i>Amanita muscaria</i> [3], <i>A. rubescens</i> [5], <i>Boletus luridiformis</i> var. <i>luridiformis</i> [1], <i>Boletus reticulatus</i> [2], <i>Chlorophyllum rhacodes</i> [8], <i>Clitocybe nebularis</i> [19], <i>Coprinellus disseminatus</i> [1],	

	<i>Echinoderma asperum</i> [1], <i>Entoloma clypeatum</i> [3], <i>Hydnum repandum</i> [1], <i>Hypholoma fasciculare</i> [8], <i>Lactarius piperatus</i> [6], <i>L. scrobiculatus</i> [3], <i>Lentinellus ursinus</i> [6], <i>Lepista nuda</i> [1], <i>Megacollybia platyphylla</i> [1], <i>Morchella esculenta</i> [14], <i>Mycena rosea</i> [2], <i>Peziza vesiculosa</i> [5], <i>Pholiota squarrosa</i> [6], <i>Pleurotus pulmonarius</i> [9], <i>Porphyrellus porphyrosporus</i> [1], <i>Russula olivacea</i> [8], <i>Suillellus luridus</i> [4], <i>Tricholoma equestre</i> var. <i>populinum</i> [1], <i>Volvopluteus gloiocephalus</i> [4]	
<i>Lordithon thoracicus</i> (FABRICIUS, 1777)	<i>Amanita muscaria</i> [14], <i>A. rubescens</i> [1], <i>Chlorophyllum rhacodes</i> [9], <i>Clitocybe nebularis</i> [11], <i>Clitopilus prunulus</i> [1], <i>Entoloma clypeatum</i> [9], <i>Hygrophorus agathosmus</i> [1], <i>Hypholoma fasciculare</i> [1], <i>Lactarius piperatus</i> [4], <i>L. scrobiculatus</i> [6], <i>Leucocybe connata</i> [1], <i>Megacollybia platyphylla</i> [66], <i>Morchella esculenta</i> [22], <i>Mycena renati</i> [2], <i>Peziza vesiculosa</i> [2], <i>Porphyrellus porphyrosporus</i> [4], <i>Rhodocollybia maculata</i> [1], <i>Suillellus luridus</i> [2], <i>Volvopluteus gloiocephalus</i> [30], <i>Xerocomus pascuus</i> [2]	
<i>Lordithon trimaculatus</i> (FABRICIUS, 1793)	<i>Amanita rubescens</i> [1], <i>Coprinellus disseminatus</i> [6], <i>Echinoderma asperum</i> [2], <i>Lactarius scrobiculatus</i> [1], <i>Lentinellus ursinus</i> [2], <i>Pholiota squarrosa</i> [1], <i>Volvopluteus gloiocephalus</i> [5]	
<i>Lordithon trinotatus</i> (ERICHSON, 1839)	<i>Amanita muscaria</i> [33], <i>Armillaria lutea</i> [3], <i>Chlorophyllum rhacodes</i> [1], <i>Hypholoma fasciculare</i> [2], <i>Pholiota squarrosoides</i> [1], <i>Rhodocollybia maculata</i> [2], <i>Tricholoma equestre</i> var. <i>populinum</i> [7], <i>T. fulvum</i> [1]	
<i>Megarthritis depressus</i> (PAYKULL, 1789)	<i>Clitocybe nebularis</i> [8], <i>Lactarius piperatus</i> [2], <i>Peziza vesiculosa</i> [1], <i>Pleurotus pulmonarius</i> [5]	
<i>Megarthritis hemipterus</i> (ILLIGER, 1794)	<i>Amanita rubescens</i> [1], <i>Lactarius piperatus</i> [19], <i>L. scrobiculatus</i> [1], <i>Russula nigricans</i> [3], <i>R. olivacea</i> [7]	
<i>Megarthritis nitidulus</i> KRAATZ, 1857	<i>Lactarius piperatus</i> [2]	
<i>Micropeplus porcatus</i> (PAYKULL, 1789)	<i>Peziza vesiculosa</i> [1]	*
<i>Omaliium rivulare</i> (PAYKULL, 1789)	<i>Entoloma clypeatum</i> [1], <i>Flammulina velutipes</i> [11], <i>Lactarius piperatus</i> [1], <i>L. scrobiculatus</i> [1], <i>Lepista nuda</i> [1], <i>Peziza vesiculosa</i> [2], <i>Phallus impudicus</i> [5], <i>Pleurotus pulmonarius</i> [1]	
<i>Omaliium septentrionis</i> THOMSON, 1857	<i>Phallus impudicus</i> [15], <i>Peziza vesiculosa</i> [1]	
<i>Omaliium validum</i> KRAATZ, 1857	<i>Phallus impudicus</i> [2]	N
<i>Ontholestes haroldi</i> (EPPELSHEIM, 1884)	<i>Peziza vesiculosa</i> [2]	N
<i>Ontholestes tessellatus</i> (GEOFFROY, 1785)	<i>Boletus reticulatus</i> [1], <i>Lactarius piperatus</i> [2]	
<i>Othius subuliformis</i> STEPHENS, 1833	<i>Lycoperdon perlatum</i> [1]	*
<i>Oxypoda alternans</i> (GRAVENHORST, 1802)	<i>Amanita muscaria</i> [8], <i>Boletus edulis</i> [5], <i>Butyriboletus subappendiculatus</i> [3], <i>Clitocybe nebularis</i> [11], <i>Hygrophorus pudorinus</i> [6], <i>Hypholoma fasciculare</i> [5], <i>Lactarius piperatus</i> [13], <i>L. pterosporus</i> [1], <i>L. scrobiculatus</i> [2], <i>Lentinellus ursinus</i> [1], <i>Lepista nuda</i> [2], <i>Mycena rosea</i> [3], <i>Pholiota squarrosa</i> [10], <i>P. squarrosoides</i> [4], <i>Russula foetens</i> [2], <i>Sarcodon imbricatus</i> [16], <i>Tricholoma fulvum</i> [1], <i>T. orirubens</i> [1], <i>T. sejunctum</i> [1], <i>Xerocomus pascuus</i> [36]	
<i>Oxypoda annularis</i> MANNERHEIM, 1830)	<i>Gymnopus confluens</i> [1]	*
<i>Oxypoda arborea</i> ZERCHE, 1994	<i>Megacollybia platyphylla</i> [1], <i>Suillellus luridus</i> [1], <i>Tricholoma aurantium</i> [1]	
<i>Oxypoda flavicornis</i> KRAATZ, 1856	<i>Flammulina velutipes</i> [4], <i>Lepista nuda</i> [1]	*
<i>Oxypoda formosa</i> KRAATZ, 1856	<i>Amanita muscaria</i> [5], <i>Armillaria lutea</i> [20], <i>Boletus luridiformis</i> var. <i>luridiformis</i> [1], <i>Clitocybe nebularis</i> [184], <i>Echinoderma asperum</i> [2], <i>Gerronema strombodes</i> [6], <i>Hydnum repandum</i> [6], <i>Hygrophorus agathosmus</i> [4], <i>Hypholoma fasciculare</i> [1], <i>H. sublateritium</i> [1], <i>Lactarius piperatus</i> [5], <i>L. scrobiculatus</i> [72], <i>Lepista nuda</i> [1], <i>Macrolepiota procera</i> [1], <i>Megacollybia</i>	

	<i>platyphylla</i> [5], <i>Mycena renati</i> [1], <i>Paxillus rubicundulus</i> [32], <i>Pholiota mutabilis</i> [6], <i>P. squarrosa</i> [4], <i>Pleurotus pulmonarius</i> [37], <i>Pluteus salicinus</i> [2], <i>Tricholoma aurantium</i> [4], <i>T. equestre</i> var. <i>populinum</i> [31], <i>T. saponaceum</i> [2], <i>Xerocomus pascuus</i> [1]	
<i>Oxypoda haemorrhoea</i> (MANNERHEIM, 1830)	<i>Lepista nuda</i> [1]	*
<i>Oxyporus maxillosus</i> (FABRICIUS, 1793)	<i>Armillaria lutea</i> [1], <i>Crepidotus mollis</i> [1], <i>Pholiota mutabilis</i> [16], <i>Volvopluteus gloiocephalus</i> [7]	MB
<i>Oxyporus rufus</i> (LINNAEUS, 1758)	<i>Suillellus luridus</i> [1]	*, MB
<i>Philonthus addendus</i> SHARP, 1867	<i>Russula delica</i> [1]	
<i>Philonthus marginatus</i> (O. MÜLLER, 1764)	<i>Lactarius piperatus</i> [1]	
<i>Proteinus atomarius</i> ERICHSON, 1840	<i>Phallus impudicus</i> [1]	
<i>Proteinus brachypterus</i> (FABRICIUS, 1792)	<i>Clitocybe nebularis</i> [16], <i>Echinoderma asperum</i> [3], <i>Flammulina velutipes</i> [5], <i>Hydnum repandum</i> [3], <i>Hygrophorus pudorinus</i> [3], <i>Hypholoma fasciculare</i> [1], <i>Lacrymaria lacrymabunda</i> [1], <i>Lactarius piperatus</i> [4], <i>L. scrobiculatus</i> [9], <i>Lentinellus ursinus</i> [2], <i>Mycena rosea</i> [2], <i>Phallus impudicus</i> [12], <i>Pholiota squarrosoides</i> [1], <i>Russula nigricans</i> [2], <i>Tapinella atrotomentosa</i> [2], <i>Tricholoma fulvum</i> [1], <i>T. saponaceum</i> [2]	
<i>Proteinus crenulatus</i> PANDELLÉ, 1867	<i>Clitocybe nebularis</i> [17], <i>Echinoderma asperum</i> [10], <i>Hydnum repandum</i> [15], <i>Hygrophorus agathosmus</i> [8], <i>Hygrophorus pudorinus</i> [5], <i>Hypholoma fasciculare</i> [4], <i>Lactarius piperatus</i> [12], <i>L. scrobiculatus</i> [49], <i>Phallus impudicus</i> [47], <i>Pholiota squarrosa</i> [2], <i>Sarcodon imbricatus</i> [2], <i>Tricholoma aurantium</i> [3], <i>T. orirubens</i> [1]	
<i>Proteinus laevigatus</i> HOCHHUTH, 1872	<i>Lactarius scrobiculatus</i> [3], <i>Russula nigricans</i> [1], <i>R. olivacea</i> [3]	
<i>Proteinus ovalis</i> STEPHENS, 1834	<i>Hygrophorus pudorinus</i> [2], <i>Phallus impudicus</i> [4]	*
<i>Quedius cruentus</i> (OLIVIER, 1795)	<i>Clitocybe nebularis</i> [1]	*
<i>Quedius mesomelinus mesomelinus</i> (MARSHAM, 1802)	<i>Armillaria borealis</i> [1], <i>Hericium flagellum</i> [1], <i>Pleurotus pulmonarius</i> [1]	
<i>Quedius xanthopus</i> ERICHSON, 1839	<i>Asterostroma cervicolor</i> [1], <i>Mycena zephirus</i> [3]	
<i>Rugilus rufipes</i> GERMAR, 1836	<i>Peziza vesiculosa</i> [1]	
<i>Scaphisoma agaricinum</i> (LINNAEUS, 1758)	<i>Crepidotus mollis</i> [2], <i>Hyphodontia spathulata</i> [1]	MB
<i>Scaphisoma boreale</i> LUNDBLAD, 1959	<i>Artomyces pyxidatus</i> [1]	MB
<i>Sepedophilus marshami</i> (STEPHENS, 1832)	<i>Hyphodontia spathulata</i> [2]	*
<i>Tachinus corticinus</i> GRAVENHORST, 1802	<i>Bovistella utriformis</i> [1]	*
<i>Tachinus laticollis</i> GRAVENHORST, 1802	<i>Lactarius piperatus</i> [6]	
<i>Tachinus marginatus</i> (FABRICIUS, 1793)	<i>Gyromitra infula</i> [1]	
<i>Tachinus pallipes</i> (GRAVENHORST, 1806)	<i>Lactarius piperatus</i> [15], <i>Russula olivacea</i> [7]	
Ptiliidae [1]		
<i>Nossidium pilosellum</i> (MARSHAM, 1802)	<i>Coprinellus disseminatus</i> [2]	*
Geotrupidae [1]		
<i>Anoplotrupes stercorosus</i> (SCRIBA, 1791)	<i>Armillaria borealis</i> [1], <i>Chlorophyllum rhacodes</i> [1], <i>Lactarius piperatus</i> [1]	
Throscidae [1]		
<i>Aulonothroscus brevicollis</i> (BONVOULOIR, 1859)	<i>Megacollybia platyphylla</i> [1]	
Dasytidae [1]		
<i>Aplocnemus nigricornis</i> (FABRICIUS, 1792)	<i>Lepista nuda</i> [1]	*
Sphindidae [1]		
<i>Aspidiphorus orbiculatus</i> (GYLLENHAL, 1808)	<i>Pleurotus pulmonarius</i> [1]	*

Nitidulidae [6]		
<i>Cychramus luteus</i> (FABRICIUS, 1784)	<i>Armillaria lutea</i> [5], <i>Tricholoma equestre</i> var. <i>populinum</i> [9]	*, MB
<i>Cychramus variegatus</i> (HERBST, 1792)	<i>Armillaria lutea</i> [10], <i>Tricholoma equestre</i> var. <i>populinum</i> [2]	*, MB
<i>Cyllodes ater</i> (HERBST, 1792)	<i>Pholiota mutabilis</i> [1], <i>Pleurotus pulmonarius</i> [1]	MB
<i>Omosita depressa</i> (LINNAEUS, 1758)	<i>Peziza vesiculosa</i> [1], <i>Phallus impudicus</i> [1]	
<i>Pocadius adustus</i> REITTER, 1888	<i>Amanita rubescens</i> [1], <i>Chlorophyllum rhacodes</i> [3], <i>Lycoperdon mammiforme</i> [12], <i>L. nigrescens</i> [5], <i>L. perlatum</i> [13], <i>L. pyriforme</i> [4], <i>Russula olivacea</i> [1]	MB
<i>Pocadius ferrugineus</i> (FABRICIUS, 1775)	<i>Clitocybe nebularis</i> [3], <i>Lycoperdon mammiforme</i> [2], <i>Lycoperdon pyriforme</i> [15]	MB
Monotomidae [1]		
<i>Rhizophagus dispar</i> (PAYKULL, 1800)	<i>Mycena viridimarginata</i> [1], <i>Pholiota limonella</i> [6], <i>Pleurotus abieticola</i> [1], <i>P. pulmonarius</i> [3]	
Cryptophagidae [1]		
<i>Pteryngium crenatum</i> (FABRICIUS, 1798)	<i>Megacollybia platyphylla</i> [1]	MB
Erotylidae [3]		
<i>Triplax aenea</i> (SCHALLER, 1783)	<i>Pleurotus pulmonarius</i> [9]	*, MB
<i>Triplax rufipes</i> (FABRICIUS, 1781)	<i>Pleurotus pulmonarius</i> [1]	*, MB
<i>Triplax russica</i> (LINNAEUS, 1758)	<i>Coprinellus disseminatus</i> [1]	MB
Cerylonidae [3]		
<i>Cerylon fagi</i> BRISOUT, 1867	<i>Pleurotus pulmonarius</i> [1]	
<i>Cerylon ferrugineum</i> STEPHENS, 1830	<i>Hericium flagellum</i> [3], <i>Peziza micropus</i> [1], <i>Pleurotus pulmonarius</i> [2]	
<i>Cerylon histeroides</i> (FABRICIUS, 1792)	<i>Hyphodontia spathulata</i> [1]	
Corylophidae [1]		
<i>Sericoderus lateralis</i> (GYLLENHAL, 1827)	<i>Chlorophyllum rhacodes</i> [1], <i>Clitocybe nebularis</i> [1]	*
Latridiidae [1]		
<i>Cartodere nodifer</i> (WESTWOOD, 1839)	<i>Pleurotus pulmonarius</i> [4]	MB
Ciidae [2]		
<i>Cis fusciclavis</i> NYHOLM, 1953	<i>Stereum rugosum</i> [1]	*, MB
<i>Ennearthron cornutum</i> (GYLLENHAL, 1827)	<i>Hymenochaete tabacina</i> [2]	*, MB
Mycetophagidae [5]		
<i>Litargus connexus</i> (FOURCROY, 1785)	<i>Pleurotus pulmonarius</i> [3]	MB
<i>Mycetophagus ater</i> (REITTER, 1879)	<i>Pleurotus pulmonarius</i> [1]	MB
<i>Mycetophagus multipunctatus</i> (FABRICIUS, 1792)	<i>Pleurotus pulmonarius</i> [1]	MB
<i>Mycetophagus quadripustulatus</i> (LINNAEUS, 1760)	<i>Pleurotus pulmonarius</i> [1]	MB
<i>Triphyllus bicolor</i> (FABRICIUS, 1792)	<i>Pluteus salicinus</i> [2]	MB
Tetratomidae [2]		
<i>Tetratoma ancora</i> FABRICIUS, 1790	<i>Craterellus cornucopioides</i> [1], <i>Tremella mesenterica</i> [2]	*, MB
<i>Tetratoma fungorum</i> FABRICIUS, 1790	<i>Flammulina velutipes</i> [6]	MB
Chrysomelidae [2]		
<i>Hermaeophaga mercurialis</i> (FABRICIUS, 1792)	<i>Peziza vesiculosa</i> [1]	
<i>Timarcha metallica</i> (LAICHARTING, 1781)	<i>Peniophora incarnata</i> [1]	*
Curculionidae [1]		
<i>Rhyncolus elongatus</i> (GYLLENHAL, 1827)	<i>Hericium flagellum</i> [1]	

Table 4. List of beetle families collected on macromycetes in the Pieniny National Park
(in order of decreasing number of species)

Tabela 4. Lista rodzin chrząszczy zebranych na makromycetes w Pienińskim Parku Narodowym
(w kolejności malejącej liczby gatunków)

Coleopteran family	Number of species (beetles)	Number of specimens (beetles)	Number of species of fungi inhabited by beetles
Staphylinidae	103 (69.13%)	9479 (98.08%)	92
Leiodidae	8 (5.37%)	17 (0.18%)	13
Nitidulidae	6 (4.03%)	89 (0.92%)	14
Mycetophagidae	5 (3.36%)	8 (0.08%)	2
Cerylonidae	3 (2.01%)	8 (0.08%)	4
Erotylidae	3 (2.01%)	11 (0.11%)	2
Carabidae	2 (1.34%)	2 (0.02%)	2
Chrysomelidae	2 (1.34%)	2 (0.02%)	2
Ciidae	2 (1.34%)	3 (0.03%)	2
Silphidae	2 (1.34%)	2 (0.02%)	2
Tetatomidae	2 (1.34%)	9 (0.09%)	3
Corylophidae	1 (0.67%)	2 (0.02%)	2
Cryptophagidae	1 (0.67%)	1 (0.01%)	1
Curculionidae	1 (0.67%)	1 (0.01%)	1
Dasytidae	1 (0.67%)	1 (0.01%)	1
Geotrupidae	1 (0.67%)	3 (0.03%)	3
Hydrophilidae	1 (0.67%)	8 (0.08%)	1
Latridiidae	1 (0.67%)	4 (0.04%)	1
Monotomidae	1 (0.67%)	11 (0.11%)	4
Ptiliidae	1 (0.67%)	2 (0.02%)	1
Sphindidae	1 (0.67%)	1 (0.01%)	1
Throscidae	1 (0.67%)	1 (0.01%)	1
	149 (100.00%)	9665 (100.00%)	

Obligatory mycetobionts (MB) accounted for 61.2% of all the individual beetles recorded; they were members of 41 species and inhabited 64 species of fungi. Fleshy, short-lived mushrooms are an ephemeral microhabitat for beetles and the degree of colonisation depends on the species of fungi as well as its decomposition stage. Growing, mature and sporulating sporocarps (stages I and II) are the main

hosts for mycetobionts. In contrast, non-mycetobionts are dominant in dead sporocarps (Fig. 3). The majority of beetles were collected on fungi belonging to three classes: Agaricales, Russulales and Boletales (Table 5). Only non-mycetobionts were collected from several classes of fungi, i.e. Cantharellales, Pezizales, Phallales and Tremellales.

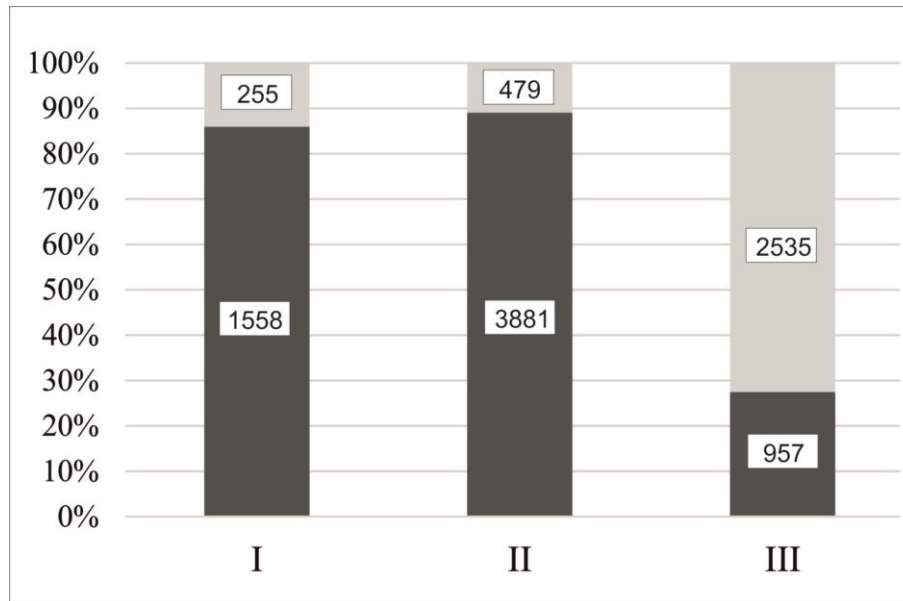


Fig. 3. Percentage of individual beetles collected from macromycetes with respect to the stage of decomposition. Light grey – non-mycetobionts (NMB), dark grey – mycetobionts (MB), I, II, III – stage of decomposition.

Ryc. 3. Procentowy udział chrząszczy zebranych z makromycetes w poszczególnych stadiach rozkładu. Jasnoszary – nie mycetobionty (NMB), ciemnoszary – mycetobionty (MB), I, II, III – stadia rozkładu.

Table 5. Numbers of mycetobiont (MB) and non-mycetobiont (NMB) beetles collected on particular classes of fungi

Tabela 5. Liczba chrząszczy mycetobiontycznych (MB) i nie mycetobiontycznych (NMB) zebranych na grzybach z poszczególnych klas

Class of fungi Klasa grzybów	Number of samples Liczba prób		Number of species Liczba gatunków		Number of specimens Liczba okazów	
	MB	NMB	MB	NMB	MB	NMB
Agaricales	92 (46.7%)	90 (45.7%)	35 (23.5%)	68 (45.6%)	5679 (58.8%)	1885 (19.5%)
Russulales	8 (4.1%)	27 (13.7%)	8 (5.4%)	52 (34.9%)	26 (0.3%)	1089 (11.3%)
Boletales	1 (0.5%)	18 (9.1%)	5 (3.4%)	25 (16.8%)	200 (2.1%)	267 (2.8%)
Hymenochaetales	3 (1.5%)	1 (0.5%)	3 (2.0%)	5 (3.4%)	4 (0.04%)	7 (0.7%)
Auriculariales	1 (0.5%)	-	1 (0.7%)	-	2 (0.02%)	-
Thelephorales	1 (0.5%)	1 (0.5%)	1 (0.7%)	2 (1.3%)	2 (0.02%)	18 (0.19%)
Cantharellales	2 (1%)	5 (2.5%)	1 (0.7%)	17 (11.4%)	1 (0.01%)	192 (1.99%)
Pezizales	-	8 (4.1%)	-	25 (16.8%)	-	147 (1.5%)
Phallales	-	4 (2%)	-	17 (11.4%)	-	143 (1.5%)
Tremellales	1 (0.5%)	1 (0.5%)	1 (0.7%)	1 (0.7%)	2 (0.02%)	1 (0.01%)
	197 (100%)		149 (100%)		9665 (100%)	
Total / Łącznie	109	155	55	212	5916	3749

There were significant differences between the assemblages of beetles associated with growing, mature and dead sporocarps (Table 6). The greatest numbers of individuals were collected on mature sporocarps (decomposition stage II), and the proportion of mycetobiontic species was also the largest in this group. The total number of species was

the largest in dead sporocarps, but this assemblage was significantly scarcer in mycetobionts. The mean number of beetle species in a sample was similar in all decomposition stages, varying from 1.2 to 1.3.

Table 6. Beetles in samples of sporocarps at particular stages of decomposition
Tabela 6. Chrząszcze w próbach z owocników w poszczególnych stadiach rozkładu

Decomposition stage Stadium rozkładu	Number of specimens Liczba okazów	Number of samples Liczba prób	Number of all species / Number of MB (proportion of MB species) Liczba gatunków / Liczba mycetobiontów (procent gatunków mycetobiontycznych)	Mean number of beetle specimens in a sample Średnia liczba okazów chrząszczy w próbie	Mean number of beetle species in a sample Średnia liczba gatunków chrząszczy w próbie
I	1813	44	59/17 (28.8%)	41.2	1.3
II	4360	63	78/29 (37.2%)	69.2	1.2
III	3492	92	109/23 (21.1%)	38.0	1.2

The majority of mycetobionts were recorded in the Staphylinidae family (5974 individuals and 23 species). Members of the spore-feeding subtribe Gyrophaenina (Staphylinidae: Aleocharinae) were especially abundant, representing 98% of mycetobionts (5762 individuals and 17 species). Beetles of the genus *Gyrophaena* were also the dominant group, with 60% of the total number of specimens, 96% of which inhabited agaricoid fungi (46% in sporocarps growing on soil and 54% in sporocarps growing on wood). *Gyrophaena fasciata* (Staphylinidae) was the most abundant species, represented by 2249 individuals from 21 samples, with 1331 specimens taken from three samples (several dozen sporocarps) of *Pholiota mutabilis* and 423 specimens from a few sporocarps of *Echinoderma asperum*. The second most abundant *Gyrophaena* species was *G. pulchella* with 1380 individuals inhabiting 14 species of fungi.

Young, fresh or mature and sporulating fruiting bodies (decomposition stages I or II) were inhabited by 31 mycetobionts (c. 75,6% of the total number of mycetobiont species recorded in the present study). On the other hand, decomposing sporocarps (decomposition stage III) were inhabited by c. 56,1% of mycetobionts. Mycetobionts colonised sporocarps in various proportions. We recorded 71 samples in which 80–100% of the beetles were mycetobionts, but we also collected 90 samples containing only non-mycetobionts.

The most common group inhabiting mainly fruiting bodies in which mycetobionts occurred in small numbers or were absent were beetles of the genus *Atheta* THOMSON – the second most speciose genus recorded during the survey. *Atheta* beetles were collected from 50 species of fungi (32 species and 2142 individuals), of which 81.7% of specimens inhabited fruiting bodies in decomposition stage III (dead but fairly well-preserved basidiocarps).

The greatest number of beetles per sample was recorded for *Pholiota mutabilis* (mean = 200 beetles/samples, range 5–795). In the first stage of decomposition of the fruiting bodies, sporocarps were inhabited by 38 individuals, 37 of which were obligatory mycetobionts (MB). Beetles obtained from mature basidiocarps (stage II) were the most abundant group, where 1697 out of the 1703 specimens were primary fungivores (MB). Dead but fairly well-preserved basidiocarps of *P. mutabilis* (stage III) were the hosts of 64 beetles, 56 of which were mycetobionts (Fig. 4).

The large number of individuals collected on sporocarps of *Pholiota mutabilis* facilitated comparison of the preferences of particular beetle taxa (Table 7). All the mycobionts were present on mature sporocarps, while some were also present on young or old sporocarps. Only two species were collected on sporocarps in all three development stages.

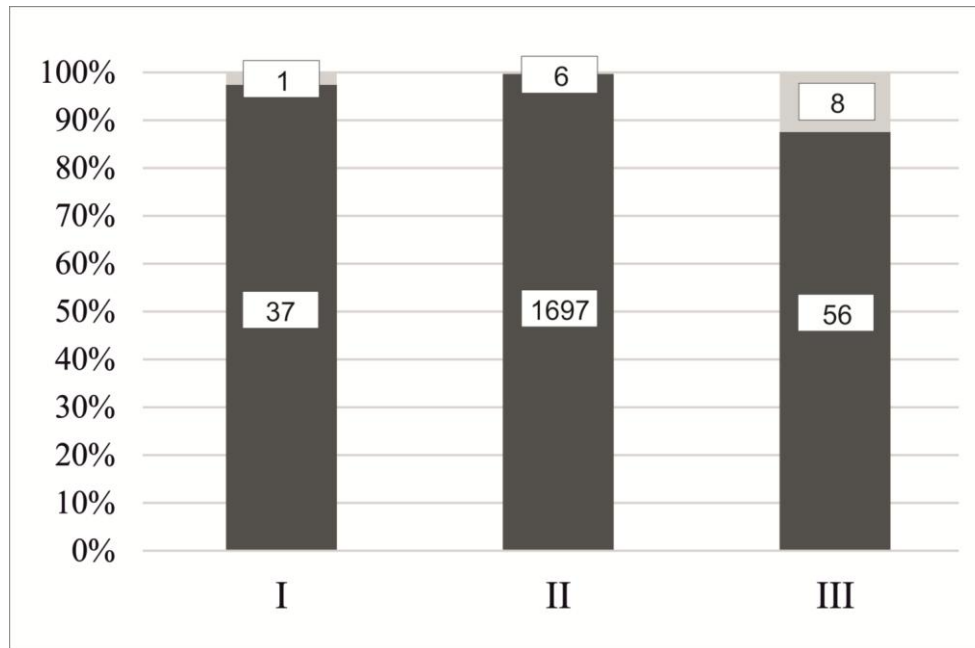


Fig. 4. Proportion of mycetobionts (dark grey) and non-mycetobionts (light grey) collected from *Pholiota mutabilis* in sporocarps of particular decomposition stages (see Table 1).

Ryc. 4. Proporcje mycetobiontów (ciemnoszary) i nie mycetobiontów (jasnoszary) zebranych z owocników *Pholiota mutabilis* w poszczególnych stadiach rozkładu (por. Tab. 1).

Table 7. Microsuccession of beetles on sporocarps of *Pholiota mutabilis* in various decomposition stages (the grey cells in the table denote the presence of beetles)

Tabela 7. Mikorosukcesja chrząszczy na owocnikach *Pholiota mutabilis* w różnych stadiach rozkładu (szare komórki tabeli oznaczają obecność chrząszczy)

Species Gatunek	Stage I Stadium I	Stage II Stadium II	Stage III Stadium III
<i>Cyllodes ater</i>			
<i>Gyrophana poweri</i>			
<i>G. pulchella</i>			
<i>Oxypoda formosa</i>			
<i>Oxyporus rufus</i>			
<i>Atheta fungicola</i>			
<i>G. affinis</i>			
<i>G. bihamata</i>			
<i>G. fasciata</i>			
<i>G. williamsi</i>			
<i>G. manca</i>			
<i>G. minima</i>			

Selected rare species of Coleoptera

Acrulia inflata (Staphylinidae, Omaliinae)

A relict of natural forests (SZUJECKI 2017), recorded from several localities in southern Poland and the Białowieża Primeval Forest.

New records in the PNP:

- Trzy Korony Mt., 12 VII 2016, 1 ex. on *Hyphodontia spathulata* (decomposition stage IIW) growing c. 1 m above the ground on a *Fagus sylvatica* log in *Dentario glandulosae-Fagetum typicum* var. *typicum* forest;
- Tylskie Góry, 13 VII 2016, 1 ex. between the gills of *Pleurotus pulmonarius* (IIID), growing c. 1 m above the ground on a snag of *Sorbus aucuparia* in the *Caltha laeta – Chaerophyllum hirsutum* plant community;
- Zagroń, 01 VII 2017, 1 ex. between the gills of *Pleurotus pulmonarius* (I), growing c. 1 m above the ground on a *Fagus sylvatica* log in *Dentario glandulosae-Fagetum typicum* var. *typicum* forest.

Atheta depressicollis (Staphylinidae, Aleocharinae)

A boreo-alpine rove beetle, recorded from Austria, Estonia, Finland, France, Germany, Italy, Latvia, Norway, Russia (North European territory and West Siberia), Slovakia, Sweden and Switzerland (LÖBL & LÖBL 2015). In the Slovakian Tatra Mts., it was

collected on *Lactarius* sp. at the edge of a spruce forest (MANTIČ 2012). This is the first record in Poland.

A new record in the PNP:

- Bajków Groń, 29 X 2016, 1 ex. between the gills of *Clitocybe nebularis* (IIIW), edge of *Dentario glandulosae-Fagetum typicum* var. *typicum* forest.

Gyrophana rousi (Staphylinidae, Aleocharinae)

The species was recorded as new for the Polish fauna in our previous paper reporting the results of the studies in PNP (CHACHUŁA et al. 2019). Our observations suggest that this is a mycophagous species occurring on a wide range of fungi.

New records in the PNP:

- Za Piecem, 21 V 2017, 4 exx. between the gills of *Entoloma clypeatum* (IIW) growing on the ground in an apple orchard, *Prunus spinosa-Cornus sanguinea* community;
- vicinity of the Szkółka Leśna forest nursery, 07 VIII 2016, 7 exx. between the gills of *Gymnopus confluens* (I), on forest leaf litter, *Cephalanthero albae-Fagetum abietetosum*, floristically poor variant;
- Wielka Dolina, 10 VIII 2017, 1 ex. between the gills of *Pluteus salicinus* (IIW) growing on branches of *Fagus sylvatica* c. 30 cm above ground, *Dentario glandulosae-Fagetum typicum* var. *typicum*.

Lordithon trimaculatus
(Staphylinidae, Tachyporinae)

A boreo-alpine species and a relict of primeval forests (BURAKOWSKI et al. 1980). In Poland, known mostly from old records in the southern part of the country. Widely distributed in the PNP.

New records in the PNP:

- Łonny Potok, 30 VII 2016, 1 ex. between the gills of *Amanita rubescens* (IIW) growing on the ground, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant;
- Pajówka, 16 V 2017, 6 exx. between the gills of *Coprinellus disseminatus* (I) growing on a snag of *Salix* sp., *Tilio-Carpinetum*;
- vicinity of the PNP Administration Building, 13 IX 2016, 2 exx. between the gills of *Echinoderma asperum* (IIW) growing on lawns;
- Czerniawa, 04 IX 2016, forest, 1 ex. between the gills of *Lactarius scrobiculatus* (IIIW) growing on the ground, *Dentario glandulosae-Fagetum typicum*, floristically poor variant;
- Białe Skalki, 15 X 2016, 2 exx. between the gills of *Lentinellus ursinus* (IIIW) on a log of *Abies alba* ca. 10 cm above ground, *Dentario glandu-*

losae-Fagetum abietetosum, floristically poor variant;

- Ociemny Potok stream, 07 X 2016, 1 ex. between the gills of *Pholiota squarrosa* (IIIW) growing on a snag of *Abies alba* c. 10 cm above the ground, *Dentario glandulosae-Fagetum typicum* var. *typicum*;
- Kras, 29 V 2017, 5 exx. between the gills of *Volvopluteus gloiocephalus* (IIW) growing on a heap of decaying hay at the edge of *Alnetum incanae* forest.

Omaliium septentrionis (Staphylinidae, Omaliinae)

A rare species, known from scattered localities in Poland. According to BURAKOWSKI et al. (1979), it occurs in various decaying substrates, including fungi and carcasses, but also the burrows of rodents.

New records in the PNP:

- Kras, 21 V 2017, 5 exx. in the flesh of *Peziza vesiculosa* (IIW) growing on a heap of decaying hay at the edge of *Alnetum incanae* forest;
- Ociemny Potok stream, 18 IX 2016, 1 ex., 07 X 2016, 14 exx. in *Phallus impudicus* (IIW), growing on the ground in *Dentario glandulosae-Fagetum typicum* var. *typicum* forest.

Agathidium bescidicum (Leiodidae)

A rather rare, Carpathian species, recorded from the Pieniny Mts. by KILIAN & BOROWIEC (1998).

A new record in the PNP:

- Trzy Korony Mt., 12 VII 2016, 2 exx. on *Hypodontia spathulata* (IIW) on a log of *Fagus sylvaticus* c. 1.2 m above the ground, in *Dentario glandulosae-Fagetum typicum* var. *typicum* forest.

Discussion

Host preferences of beetles

Non-polyporoid macromycetes are diverse in both their ecology and taxonomy. For the purposes of this analysis, several groups of fungi were distinguished, either on the basis of systematics (Ascomycota, 5 species; Boletaceae, 8 spp.; Lycoperdaceae, 5 spp.; and Phallaceae, 1 sp.), or on the basis of morphology and biology (agaricoid basidiomycetes growing on wood, 28 spp.; agaricoid basidiomycetes growing on soil, 42 spp.; aphylloroid fungi growing on wood, 10 spp.; aphylloroid fungi growing on soil, 4 spp.).

Among the beetles collected on Ascomycota, Staphylinidae were not as abundant as in other groups, making up 69% of the beetle species collected. The other species were either collected accidentally (like *Hermaeophaga mercurialis* and *Notiophilus aquaticus*) or were observed on the rotting fruiting bodies of various species (e.g. *Apocatops nigrita*, *Cerylon ferrugineum*, *Megasternum concinnum* and *Omosita depressa*).

According to BRUNS (1984), the sporocarps of Boletaceae are infested by beetles mostly when they are old, senescent and heavily fly-infested. This is consistent with the data collected in the present study: the most numerous assemblages of beetles were found in dead, wet basidiocarps of *Boletus reticulatus* and *Suillellus luridus*.

The assemblage of beetles inhabiting *Lycoperdaceae* is species-poor, but highly specific. Two nitidulid species that develop on fruiting bodies – *Pocadius adustus* and *P. ferrugineus* – were dominants, and staphylinids were also collected sporadically, which corroborates the data of other authors (EISFELDER 1961).

On fruiting bodies of the only member of *Phallaceae* – *Phallus impudicus*, 16 species of beetles were collected, including *Oiceoptoma thoracicum*, which is commonly associated with this fungus (SCHREMMER 1963). Among other beetles associated with *Phallus*, rove beetles were most numerous, with several rarely collected species like *Omalium septentrionis*, *O. validum* and *Proteinus ovalis*.

The group of agaricoid basidiomycetes growing on wood is the second richest where the number of beetle species is concerned. Staphylinidae were dominants, but several mycophilous or mycophagous species from other families, like Leiodidae, Nitidulidae, Tetratomidae and Mycetophagidae, were also collected. Several species of fungi, like *Armillaria lutea*, *Flammulina velutipes*, *Pleurotus pulmonarius*, *Pholiota mutabilis* and *Megacollybia platyphylla*, are exceptionally rich in beetle species. The large number of beetle species associated with *Armillaria* fungi is a well known fact (SCHIGEL 2007), although in our study only two were found on fruiting bodies of *Armillaria borealis*, probably because of the small number of fruiting bodies that were examined. The occurrence of two species of *Cychramus* KUGELANN (Nitidulidae) is typical for *Armillaria* fungi. In the PNP, a large number of beetles were associated with *Megacollybia platyphylla* and *Pleurotus pulmonarius*, which corroborates records from Scandinavia (SCHIGEL 2007). The latter species requires special attention, as it was the only species among the agaricoid fungi on which members of Mycetophagidae and the genus *Triplax* J.F.W. HERBST (Erotylidae) were collected.

Agaricoid basidiomycetes growing on the ground were a species-rich group with 42 species of fungi and 90 species of associated beetles. Most of the beetles (88% of species) were staphylinids. Apart from rove beetles, members of the families Erotylidae, Geotrupidae, Leiodidae, Nitidulidae, Ptiliidae and Silphidae were also collected. *Lactarius piperatus* was a fungus that attracted a large number

of beetle species – 34 were collected in sporocarps in decomposition stage III. Other fungi commonly inhabited by beetles were *Lactarius scrobiculatus*, *Russula olivacea* and *Clitocybe nebularis*. In most cases, fresh or growing sporocarps attracted fewer beetle species than old, decaying ones.

Aphylloroid fungi growing on wood were infrequent and usually unattractive to beetles. In the case of seven species of fungi, only a single associated beetle was collected on sporocarps, and only two species of fungi attracted four or more species: four beetle species were collected on *Hericium flagellum* and six on *Hyphodontia spathulata*. Significantly, this was the only group among the non-polyporoid macromycetes that hosted Ciidae, a family very commonly infesting polyporoid fungi (CHACHUŁA et al. 2018, 2019). Only about half (53%) of the species collected on aphylloroid fungi were staphylinids, a group which was the most common in many other ecological or systematic groups of fungi analysed here.

Aphylloroid fungi growing on soil were rare, with only 4 species of fungi and 21 associated beetle species, most of which (16 species) were collected on sporocarps of *Hydnum repandum*.

Data on beetles inhabiting sporocarps in various stages of decomposition differ from similar observations available for polyporoid fungi (SCHIGEL et al. 2004). Fruiting bodies of polyporoid fungi often live for more than one season and can host beetles, e.g. Ciidae, throughout their lifetime. In contrast, non-polyporoid fungi are often short-lived and the succession of beetle assemblages is rapid.

Rare and endangered mycophagous beetles in the PNP

During the survey, 15 species of mycetobiontic beetles were first records for the PNP. The number of obligatory mycophagous beetle species recorded in the PNP this increased from 60 to 85 when compared to the previous study (CHACHUŁA et al. 2019).

Rare mycophagous beetles, both reported in CHACHUŁA et al. 2019 and in the present paper, occur in the eastern part of the PNP, where strictly protected areas prevail, or in the vicinity of such areas. The central section of the PNP, where landscape protection dominates, is characterised by the lowest number of rare mycophagous beetles.

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STRESZCZENIE

Praca podsumowuje badania nad interakcjami między chrząszczami a makromycetami (z wyłączeniem grzybów poliporoidalnych i podziemnych) przeprowadzone w latach 2016-2018 w Pienińskim Parku Narodowym (PPN). Zebrano 197 prób ze 103 gatunków grzybów (98 gatunków Basidiomycota i 5 Ascomycota). W efekcie przeprowadzonych prac, wykazano 24 gatunki grzybów nowych dla PPN, w tym trzy gatunki zagrożone (E) w Polsce: *Asterostroma cervicolor* (BERK. & M.A. CURTIS) MASSEE, *Lactarius zonarioides* KÜHNER & ROMAGN. i *Hydropus atramentosus* (KALCHBR.) KOTL. & POUZAR. Zebrano 9665 okazów chrząszczy, które należały do 149 gatunków i 22 rodzin, wśród których odnotowano wiele gatunków rzadkich i interesujących. *Atheta depressicollis* FAUVEL została wykazana z Polski po raz pierwszy, znaleziono również nowe stanowiska *Gyrophana rousi* DVOŘAK w Polsce, gatunku wykazanego niedawno z Pienin jako nowy dla Polski. Cztery spośród stwierdzonych gatunków chrząszczy figurują na polskiej czerwonej liście zwierząt: *Agathidium bescidicum* REITTER – w kategorii CR, *Omalium septentrionis* THOMSON i *Mycetophagus ater* (REITTER) – oba EN oraz *Acrulia inflata* (GYLLENHAL) – VU. 15 gatunków chrząszczy wykazano z PPN po raz pierwszy. Liczba obligatoryjnie mykofagicznych chrząszczy znanych z PPN wzrosła z 60 do 85 w porównaniu z poprzednią pracą (CHACHUŁA et al. 2019). Stanowiska rzadkich chrząszczy mykofagicznych związanych z grzybami poliporoidalnymi, jak i tych wykazanych w bieżącej pracy skupiają się we wschodniej części PPN, w której dominują obszary ściśle chronione, objęte ochroną zachowawczą, bądź tereny położone w sąsiedztwie obszarów ściśle chronionych. Centralna część PPN, w której dominuje ochrona krajobrazowa, charakteryzuje się najmniejszą liczbą stwierdzonych stanowisk rzadkich chrząszczy mykofagicznych. Miękkie, krótko żyjące owocniki grzybów stanowią efemeryczne i nietrwałe mikrośrodowisko życia chrząszczy, a skład gatunkowy ich koleopterofauny zależy zarówno od przynależności taksonomicznej grzyba, jak i stopnia dojrzałości/rozkładu owocnika. Rosnące, dojrzałe i zarodnikujące owocniki są najchętniej zasiedlane przez mycetobionty, podczas gdy w owocnikach zamierających i martwych dominują nie mycetobiontyczne chrząszcze. Większość chrząszczy zebrano z grzybów należących do trzech klas: Agaricales, Russulales i Boletales. Na grzybach z klas takich jak Cantharellales, Pezizales, Phallales i Tremellales, zebrano wyłącznie gatunki nie mycetobiontyczne.

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APPENDIX I

Index of macromycete fungi samples with respect to their location, decomposition stages of basidiocarps and plant communities.

List compiled according to the scheme:
fungi species, number of basidiocarps¹/
decomposition stages/location of basidiocarp²,
plant community/location data/ID number/
date of collection

1. Bajków Groń, forest

- 1.1 *Clitocybe nebularis*, F/II W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'36.5"; 20°24'49.1"; 683 m a.s.l., 217/29.10.2016.
- 1.2 *Clitocybe nebularis*, F/III W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'36.5"; 20°24'49.1"; 683 m a.s.l., 216/29.10.2016.
- 1.3 *Paralepista flaccida*, F/III W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'36.5"; 20°24'49.1"; 683 m a.s.l., 215/29.10.2016.

2. Barbarzyna, forest

- 2.1 *Mycena renati*, F/I/0,3/*Corylus avellana*, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'45.4"; 20°19'56.9"; 547 m a.s.l., 001/28.05.2016.
- 2.2 *Paxillus rubicundulus*, F/I/G, *Alnetum incanae*, 49°25'43.3"; 20°20'00.1"; 531 m a.s.l., 001/19.06.2016.

3. Białe Skalki Mt., forest

- 3.1 *Clitocybe nebularis*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'30.1"; 20°25'00.6"; 678 m a.s.l., 193/15.10.2016.
- 3.2 *Lentinellus ursinus*, F/III W/0,1/*Abies alba*, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'30.1"; 20°25'00.6"; 678 m a.s.l., 195/15.10.2016.
- 3.3 *Pleurotus pulmonarius*, OD/III W/1,0/*Fagus sylvatica*, *Dentario glandulosae-Fagetum abietetosum*, floristically

¹ ABBREVIATIONS: **S** – single, **F** – a few, **I-IV** – decomposition stages of fungal basidiocarps, according to Thunes (1994), modified by Schigel et al. 2004. (subclasses **D** – dry, **W** – wet), **OD** – over a dozen, **SD** – several dozen.

² **G** – ground or height from the ground in metres.

- poor variant, 49°25'30.1"; 20°25'00.6"; 678 m a.s.l., 194/15.10.2016.
- 3.4 *Russula olivacea*, F/II W/G, *Phyllitido-Aceretum*, 49°25'29.98"; 20°24'58.9"; 673 m a.s.l., 379/20.07.2017.
- 3.5 *Hydnum repandum*, S/II W/G, complex of tall-herb meadows in lower situations, 49°25'29.48"; 20°25'01.54"; 675 m a.s.l., 227/11.11.2016.
- 4. Bialy Potok, stream**
- 4.1 *Agaricus augustus*, F/III W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'30.1"; 20°23'09.9"; 605 m a.s.l., 004/13.07.2016.
- 4.2 *Amanita rubescens*, F/III W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'30.1"; 20°23'09.9"; 605 m a.s.l., 005/13.07.2016.
- 4.3 *Boletus luridiformis* var. *luridiformis*, S/III D/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'30.1"; 20°23'09.9"; 625 m a.s.l., 006/13.07.2016.
- 4.4 *Boletus reticulatus*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'39.0"; 20°23'13.4"; 580 m a.s.l., 002/13.07.2016.
- 4.5 *Boletus reticulatus*, S/III W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'30.1"; 20°23'09.9"; 605 m a.s.l., 003/13.07.2016.
- 4.6 *Butyriboletus subappendiculatus*, S/II W/0/ *Abies alba*, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°26'00.6"; 20°23'52.8"; 544 m a.s.l., 450/16.09.2017.
- 4.7 *Suillellus luridus*, S/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'39.0"; 20°23'13.4"; 580 m a.s.l., 001/13.07.2016.
- 5. Burzana, forest**
- 5.1 *Crepidotus applanatus*, F/II W/0,3/*Fagus sylvatica*, *Carici albae-Fagetum typicum* floristically poor variant, 49°25'30.9"; 20°26'01.9"; 678 m a.s.l., 009/25.06.2016.
- 5.2 *Pleurotus pulmonarius*, SD/III D/1,0/ *Fagus sylvatica*, *Carici albae-Fagetum typicum* floristically poor variant, 49°25'30.9"; 20°26'01.9"; 678 m a.s.l., 010/25.06.2016.
- 6. Bystrzyk Mt., forest**
- 6.1 *Armillaria lutea*, SD /II W/0,5/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°24'58.7"; 20°27'03.6"; 463 m a.s.l., 122/03.09.2016.
- 6.2 *Clitocybe nebularis*, F/I/G, *Carici albae-Fagetum* var. *typicum*, 49°24'56.5"; 20°27'16.6"; 615 m a.s.l., 115/02.09.2016.
- 6.3 *Gerronema strombodes*, SD /I /0,3/*Abies alba*, *Carici albae-Fagetum typicum* floristically poor variant, 49°24'56.8"; 20°27'06.2"; 512 m a.s.l., 118/02.09.2016.
- 6.4 *Gerronema strombodes*, SD /I/0,3/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°24'58.7"; 20°27'03.6"; 463 m a.s.l., 123/03.09.2016.
- 6.5 *Megacollybia platyphylla*, S/I/0,2/ *Abies alba*, *Phyllitido-Aceretum*, 49°24'59.6"; 20°27'13.0"; 511 m a.s.l., 117/02.09.2016.
- 6.6 *Pleurotus pulmonarius*, OD/III D/1,5/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°24'56.4"; 20°27'13.0"; 558 m a.s.l., 116/02.09.2016.
- 7. Czerniawa, forest**
- 7.1 *Amanita muscaria*, F/III WG, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'28.8"; 20°23'20.4"; 612 m a.s.l., 132/04.09.2016.
- 7.2 *Boletus reticulatus*, S/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'59.2"; 20°23'28.1"; 754 m a.s.l., 400/30.07.2017.
- 7.3 *Hypholoma fasciculare*, SD /II W/0,5/*Abies alba*, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'49.8"; 20°23'36.2"; 754 m a.s.l., 135/04.09.2016.
- 7.4 *Lactarius scrobiculatus*, OD/III W/G, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'28.8"; 20°23'20.4"; 657 m a.s.l., 129/04.09.2016.
- 7.5 *Sarcodon imbricatus*, F/II W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'49.8"; 20°23'36.2"; 754 m a.s.l., 134/04.09.2016.
- 7.6 *Tapinella atrotomentosa*, F/II W/G/*Pinus sylvestris*, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'49.8"; 20°23'36.2"; 754 m a.s.l., 133/04.09.2016.
- 7.7 *Tricholoma aurantium*, F/II W/G, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'28.8"; 20°23'20.4"; 657 m a.s.l., 130/04.09.2016.
- 7.8 *Tricholoma equestre* var. *populinum*, F/II W/G, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'28.8"; 20°23'20.4"; 657 m a.s.l., 138/04.09.2016.
- 7.9 *Tricholoma orirubens*, F/III W/G, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'28.8"; 20°23'20.4"; 657 m a.s.l., 131/04.09.2016.
- 7.10 *Tricholoma sejunctum*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'49.8"; 20°23'36.2"; 754 m a.s.l., 136/04.09.2016.
- 7.11 *Tricholomopsis rutilans*, F/III W/1,0/*Abies alba*, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'49.8"; 20°23'36.2"; 711 m a.s.l., 137/04.09.2016.
- 8. Around the Pieniny National Park's Administration Building**
- 8.1 *Echinoderma asperum*, F/II W/G, buildings, lawns and areas mechanically destroyed, 49°26'24.6"; 20°25'11.1"; 429 m a.s.l., 140/13.09.2016.
- 8.2 *Echinoderma asperum*, F/II W/G, buildings, lawns and areas mechanically destroyed, 49°26'23.8"; 20°25'10.3"; 428 m a.s.l., 170/28.09.2016.
- 8.3 *Leucocybe connata*, F/II W/G, buildings, lawns and areas mechanically destroyed, 49°24'24.1"; 20°25'10.5"; 430 m a.s.l., 172/28.09.2016.
- 8.4 *Pholiota mutabilis*, OD/II W/0,1/*Corylus avellana*, buildings, lawns and areas mechanically destroyed, 49°26'23.5"; 20°25'09.4"; 429 m a.s.l., 347/29.05.2017.
- 9. Gróbką, meadows and forest**
- 9.1 *Hebeloma sinapizans*, F/II W/G, *Corylus avellana-Oxalis acetosella* and *Corylus avellana-Aegopodium podagraria*, 49°24'52.0"; 20°21'42.0"; 581 m a.s.l., 447/14.09.2017.
- 10. Harczygrunt, meadows and forest**
- 10.1 *Boletus edulis*, S/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'46.1"; 20°19'58.0"; 575 m a.s.l., 438/07.09.2017.
- 10.2 *Hypholoma sublateritium*, OD/I/0,5/*Corylus avellana*., *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'43.9"; 20°19'56.3"; 534 m a.s.l., 128/03.09.2016.
- 10.3 *Lactarius piperatus*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'46.1"; 20°19'58.0"; 550 m a.s.l., 415/08.08.2017.
- 10.4 *Lactarius piperatus*, S/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'46.1"; 20°19'58.0"; 550 m a.s.l., 412/07.08.2017.

- 10.5 *Lactarius piperatus*, S/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'46.1"; 20°19'58.0"; 550 m a.s.l., 416/08.08.2017.
- 10.6 *Lactarius zonarioides*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'46.1"; 20°19'58.0"; 550 m a.s.l., 414/08.08.2017.
- 10.7 *Russula delica*, S/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'46.1"; 20°19'58.0"; 550 m a.s.l., 413/08.08.2017.
- 10.8 *Russula nigricans*, S/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'46.1"; 20°19'58.0"; 575 m a.s.l., 420/14.08.2017.
- 10.9 *Russula olivacea*, S/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'46.1"; 20°19'58.0"; 550 m a.s.l., 411/07.08.2017.
- 10.10 *Stereum rugosum*, F/III W/0,5/ *Corylus avellana*, *Vaccinio-Piceetalia*, 49°25'43.9"; 20°20'03.0"; 533 m a.s.l., 280/01.05.2017.
- 10.11 *Suillellus luridus*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'46.1"; 20°19'58.0"; 550 m a.s.l., 419/14.08.2017.
- 11. Kras, meadows and woodland**
- 11.1 *Mycena rosea*, F/II W/G, *Carici albae-Fagetum abietetosum* var. *typicum*, 49°25'08.3"; 20°27'04.8"; 465 m a.s.l., 448/16.09.2017.
- 11.2 *Mycena rosea*, OD/I/G, *Carici albae-Fagetum abietetosum* var. *typicum*, 49°25'06.4"; 20°27'05.1"; 454 m a.s.l., 113/01.09.2016.
- 11.3 *Peniophora incarnata*, S/III W/*Fraxinus excelsior*, *Alnetum incanae*, 49°25'28.1"; 20°26'39.4"; 425 m a.s.l., 250/06.03.2017.
- 11.4 *Psathyrella candolleana*, S/II W/G, *Alnetum incanae*, 49°25'28.6"; 20°26'43.5"; 424 m a.s.l., 319/17.05.2017.
- 11.5 *Tricholoma sejunctum*, OD/I/G, *Carici albae-Fagetum abietetosum* var. *typicum*, 49°25'06.4"; 20°27'05.1"; 424 m a.s.l., 114/01.09.2016.
- 11.6 *Volvopluteus gloiocephalus*, F/II W/G, *Alnetum incanae*, 49°25'28.4"; 20°26'50.5"; 433 m a.s.l., 343/29.05.2017.
- 11.7 *Peziza vesiculosa*, OD/III W/G, *Alnetum incanae*, 49°25'28.6"; 20°26'43.5"; 424 m a.s.l., 318/17.05.2017.
- 11.8 *Peziza vesiculosa*, OD/III W/G, *Alnetum incanae*, 49°25'28.6"; 20°26'43.5"; 433 m a.s.l., 321/21.05.2017.
- 11.9 *Peziza vesiculosa*, F/III W/G, *Alnetum incanae*, 49°25'28.6"; 20°26'43.5"; 433 m a.s.l., 344/29.05.2017.
- 11.10 *Morchella esculenta*, F/II W/G, *Prunus spinosa-Cornus sanguinea*, 49°25'11.5"; 20°27'14.6"; 443 m a.s.l., 327/21.05.2016.
- 12. Ligarki, meadows and forest**
- 12.1 *Rhodocollybia maculata*, F/II D/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°24'57.5"; 20°25'25.0"; 687 m a.s.l., 179/02.10.2016.
- 13. Lonny Potok, forest stream valley**
- 13.1 *Amanita rubescens*, F/II W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'57.8"; 20°24'49.2"; 530 m a.s.l., 003/30.07.2016.
- 13.2 *Boletus luridiformis* var. *luridiformis*, S/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°26'1,1"; 20°24'48.2"; 520 m a.s.l., 143/14.09.2016.
- 13.3 *Caloboletus calopus*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'57.8"; 20°24'49.2"; 530 m a.s.l., 004/30.07.2016.
- 13.4 *Flammulina velutipes*, SD/I/1,0/*Acer pseudoplatanus*, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'47.7"; 20°24'45.7"; 569 m a.s.l., 248/26.11.2016.
- 13.5 *Hydnum repandum*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'59.6"; 20°24'45.7"; 508 m a.s.l., 145/14.09.2016.
- 13.6 *Hypholoma fasciculare*, SD /III W/0,5/*Abies alba*, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'59.6"; 20°24'45.7"; 508 m a.s.l., 146/14.09.2016.
- 13.7 *Lactarius piperatus*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'59.7"; 20°24'45.8"; 507 m a.s.l., 147/14.09.2016.
- 13.8 *Lycoperdon nigrescens*, S/III W/0/rotting plants, *Caltho laetae-Alnetum*, 49°25'47.0"; 20°24'33.2"; 626 m a.s.l., 443/11.09.2016.
- 13.9 *Lycoperdon perlatum*, F/II W/0/rotting plants, *Caltho laetae-Alnetum*, 49°25'47.2"; 20°24'32.7"; 599 m a.s.l., 444/11.09.2016.
- 13.10 *Tricholoma fulvum*, OD/II W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°26'01.1"; 20°24'48.2"; 520 m a.s.l., 142/14.09.2016.
- 13.11 *Tricholoma saponaceum*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°26'01.1"; 20°24'48.2"; 520 m a.s.l., 141/14.09.2016.
- 14. Lupisko, forest**
- 14.1 *Lepista nuda*, F/III W/0/ forest bedding, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°26'55.2"; 20°25'08.2"; 659 m a.s.l., 243/23.11.2016.
- 15. Mala Dolina, meadows and forest**
- 15.1 *Armillaria borealis*, F/III W/1,0/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'25.2"; 20°24'07.1"; 754 m a.s.l., 465/ 25.10.2017.
- 15.2 *Pholiota mutabilis*, OD/I/0,3/*Fagus sylvatica*, artificially regenerated forest with mesophilous species in herb-layer, 49°25'22.1"; 20°24'01.8"; 773 m a.s.l., 003/22.06.2016.
- 15.3 *Pholiota mutabilis*, OD/III D/0,7/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'23.9"; 20°24'02.9"; 765 m a.s.l., 363/ 24.06.2017.
- 15.4 *Pleurotus pulmonarius*, SD/III D/1,0/*Fagus sylvatica*, artificially regenerated forest with mesophilous species in herb-layer, 49°25'21.1"; 20°24'00.3"; 774 m a.s.l., 004/22.06.2016.
- 15.5 *Pluteus salicinus*, S/I/0,5/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'19.5"; 20°24'00.1"; 771 m a.s.l., 002/22.06.2016.
- 15.6 *Xerocomus pascuus*, F/III W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'18.8"; 20°24'04.9"; 774 m a.s.l., 001/22.06.2016.
- 16. Mlaka Pod Ociemnem, wetland area**
- 16.1 *Armillaria lutea*, F/III W/0/*Salix* sp., *Alnetum incanae*, 49°25'55.2"; 20°26'14.1"; 427 m a.s.l., 236/21.11.2016.
- 16.2 *Peziza micropus*, S/I/0,7/*Carpinus betulus*, *Phyllitido-Aceretum*, 49°25'49.9"; 20°26'16.1"; 430 m a.s.l., 314/16.05.2017.
- 17. Ociemny Potok, forest stream valley**
- 17.1 *Gerronema strombodes*, OD/I/0,5/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'48.8"; 20°26'06.2"; 486 m a.s.l., 001/29.07.2016.
- 17.2 *Hydopus atramentosus*, F/III W/0,3/ *Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'43.4"; 20°25'52.7"; 561 m a.s.l., 119/18.08.2016.

- 17.3 *Lactarius piperatus*, F/I/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'52.1"; 20°26'04.3"; 456 m a.s.l., 002/29.07.2016.
- 17.4 *Lactarius pterosporus*, S/II W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'49.9"; 20°26'02.3"; 472 m a.s.l., 003/25.06.2016.
- 17.5 *Lycoperdon perlatum*, F/II W/0/rotting plants, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'47.65"; 20°25'57.9"; 493 m a.s.l., 446/12.09.2017.
- 17.6 *Lycoperdon pyriforme*, S/III W/0,2/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'52.8"; 20°25'50.1"; 542 m a.s.l., 387/27.07.2017.
- 17.7 *Phallus impudicus*, F/II W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'51.9"; 20°26'03.4"; 455 m a.s.l., 154/18.09.2016.
- 17.8 *Phallus impudicus*, F/II W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'51.9"; 20°26'03.4"; 455 m a.s.l., 186/07.10.2016.
- 17.9 *Pholiota mutabilis*, SD/II W/0,1/*Alnus incana*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'46.4"; 20°25'55.7"; 509 m a.s.l., 388/27.07.2017.
- 17.10 *Pholiota squarrosa*, OD /III W/0,1/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'45.4"; 20°25'50.6"; 522 m a.s.l., 187/07.10.2016.
- 17.11 *Pholiota squarrosa*, OD/I/0,1/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'45.4"; 20°25'50.6"; 522 m a.s.l., 151/18.09.2016.
- 17.12 *Tricholomopsis rutilans*, F/III W/0,3/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'43.3"; 20°25'52.6"; 561 m a.s.l., 121/18.08.2016.
- 18. Ociemny Wierch Mt., forest**
- 18.1 *Amanita rubescens*, F/II W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'49.42"; 20°26'07.1"; 478 m a.s.l., 092/06.08.2016.
- 18.2 *Clitocybe nebularis*, F/III W/G, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'45.0"; 20°26'11.1"; 536 m a.s.l., 238/21.11.2016.
- 18.3 *Megacollybia platyphylla*, F/II W/0,3/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'44.0"; 20°25'57.1"; 545 m a.s.l., 007/25.06.2016.
- 18.4 *Porphyrellus porphyrosporus*, S/III W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'49.41"; 20°26'07.0"; 447 m a.s.l., 091/06.08.2016.
- 18.5 *Russula foetens*, F/II W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'49.4"; 20°26'06.9"; 477 m a.s.l., 090/06.08.2016.
- 19. Pajówka, meadows and forest**
- 19.1 *Artomyces pyxidatus*, F/I/0,2/*Salix cinerea*, *Tilio-Carpinetum*, 49°25'45.86"; 20°26'22.1"; 423 m a.s.l., 312/16.05.2017.
- 19.2 *Auricularia auricula-judae*, F/II W/1.0/*Sambucus nigra*, *Tilio-Carpinetum*, 49°25'47.6"; 20°26'20.3"; 422 m a.s.l., 355/12.06.2017.
- 19.3 *Coprinellus disseminatus*, F/I/0,2/*Salix cinerea*, *Tilio-Carpinetum*, 49°25'45.86"; 20°26'22.1"; 423 m a.s.l., 308/16.05.2017.
- 19.4 *Crepidotus mollis*, F/II W/0,2/*Salix cinerea*, *Tilio-Carpinetum*, 49°25'45.86"; 20°26'22.1"; 423 m a.s.l., 311/16.05.2017.
- 19.5 *Crepidotus mollis*, F/I/0,2/*Salix cinerea*, *Tilio-Carpinetum*, 49°25'45.86"; 20°26'22.1"; 432 m a.s.l., 307/16.05.2017.
- 19.6 *Gymnopus* sp., OD/I/0,3/*Salix cinerea*, *Tilio-Carpinetum*, 49°25'47.6"; 20°26'20.3"; 422 m a.s.l., 332/21.05.2017.
- 19.7 *Mycena galericulata*, F/I/0,6/*Salix cinerea*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'38.9"; 20°26'24.4"; 435 m a.s.l., 317/17.05.2017.
- 19.8 *Mycena renati*, OD/I/0,4/*Salix cinerea*, *Tilio-Carpinetum*, 49°25'47.6"; 20°26'20.3"; 422 m a.s.l., 304/16.05.2017.
- 20. Pieniński Potok, forest stream valley**
- 20.1 *Gyromitra infula*, S/III D/0,4/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'24.1"; 20°25'18.2"; 564 m a.s.l., 223/29.10.2016.
- 20.2 *Hymenochaete tabacina*, OD/II D/1,0/*Corylus avellana*, complex of tall-herb meadows in lower situations, 49°25'25.3"; 20°24'51.5"; 654 m a.s.l., 228/11.11.2016.
- 20.3 *Pholiota mutabilis*, OD/II W/0,5/*Acer pseudoplatanus*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'23.7"; 20°25'17.4"; 560 m a.s.l., 009/22.06.2016.
- 21. Podlaźce, pasture and woodland**
- 21.1 *Megacollybia platyphylla*, F/I/0/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°24'58.1"; 20°25'21.7"; 724 m a.s.l., 005/07.07.2016.
- 21.2 *Chlorophyllum rhacodes*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'29.5"; 20°24'44.0"; 724 m a.s.l., 175/02.10.2016.
- 21.3 *Chlorophyllum rhacodes*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'28.8"; 20°24'46.7"; 536 m a.s.l., 102/06.08.2016.
- 21.4 *Clitocybe nebularis*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'29.55"; 20°24'43.9"; 535 m a.s.l., 176/02.10.2016.
- 21.5 *Hygrophorus agathosmus*, F/III W/G, *Prunus spinosa-Cornus sanguinea*, 49°24'27.2"; 20°24'42.01"; 506 m a.s.l., 174/02.10.2016.
- 21.6 *Pholiota mutabilis*, OD/I/0,3/*Corylus* sp., *Prunus spinosa-Cornus sanguinea*, 49°24'28.8"; 20°24'46.7"; 536 m a.s.l., 103/06.08.2016.
- 22. Podskalnica Góra Mt., forest**
- 22.1 *Hydnum repandum*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°24'40.4"; 20°24'10.9"; 700 m a.s.l., 224/30.10.2016.
- 23. Poręba, forest**
- 23.1 *Hericium flagellum*, S/III W/2,5/*Abies alba*, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'47.5"; 20°20'22.1"; 593 m a.s.l., 283/01.05.2017.
- 23.2 *Lycoperdon pyriforme*, F/III W/0,2/*Sambucus nigra*, artificially regenerated forest with mesophilous species in herb-layer, 49°25'55.8"; 20°19'45.9"; 603 m a.s.l., 337/26.05.2017.
- 23.3 *Lycoperdon pyriforme*, F/III W/0/*Picea abies*, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'47.5"; 20°20'22.1"; 593 m a.s.l., 284/01.05.2017.
- 23.4 *Pholiota mutabilis*, OD/II W/0,1/*Corylus avellana*, artificially regenerated forest with mesophilous species in herb-layer, 49°25'55.8"; 20°19'45.9"; 603 m a.s.l., 333/26.05.2017.
- 23.5 *Ramaria flava*, S/II W/G, *Carici albae-Fagetum abietetosum* var. *typicum*, 49°25'44.9"; 20°20'05.3"; 546 m a.s.l., 471/11.07.2018.
- 23.6 *Tremella mesenterica*, F/II W/1,5/*Corylus avellana*, artificially regenerated forest with mesophilous species in herb-layer, 49°25'55.8"; 20°19'45.9"; 622 m a.s.l., 334/26.05.2017.

24. Dunajec Gorge, near Szopa Maćkowa, forest

- 24.1 *Armillaria lutea*, F/II W/0/ leafy tree, *Carici albae-Fagetum abietetosum* var. *typicum*, 49°23'47.5"; 20°25'55.75"; 450 m a.s.l., 167/20.09.2016.
- 24.2 *Pholiota squarrosa*, F/III W/0/ leafy tree, *Carici albae-Fagetum abietetosum* var. *typicum*, 49°23'47.6"; 20°25'55.7"; 451 m a.s.l., 164/20.09.2016.
- 24.3 *Schizopora paradoxa*, S/I/0,2/*Salix cinerea*, *Carici albae-Fagetum abietetosum* var. *typicum*, 49°23'47.6"; 20°25'55.8"; 450 m a.s.l., 165/20.09.2016.

25. Sokolica Mt., forest

- 25.1 *Gymnopus confluens*, F/I/G, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'19.8"; 20°26'25.5"; 609 m a.s.l., 099/06.08.2016.
- 25.2 *Hypholoma fasciculare*, OD/I/0,1/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'07.3"; 20°26'29.3"; 656 m a.s.l., 005/18.06.2016.
- 25.3 *Megacollybia platyphylla*, F/III W/0,3/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'06.2"; 20°26'29.54"; 666 m a.s.l., 163/18.09.2016.
- 25.4 *Megacollybia platyphylla*, S/II W/0,2/*Abies alba*, *Phyllitido-Aceretum*, 49°25'18.6"; 20°26'33.2"; 516 m a.s.l., 093/06.08.2016.
- 25.5 *Megacollybia platyphylla*, F/II W/0,1/*Abies alba*, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'19.8"; 20°26'25.5"; 609 m a.s.l., 096/06.08.2016.
- 25.6 *Mycetinis alliaceus*, F/II W/0,2/*Abies alba*, *Phyllitido-Aceretum*, 49°25'18.7"; 20°26'33.3"; 514 m a.s.l., 094/06.08.2016.
- 25.7 *Pleurotus abieticola*, F/III D/2.0/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'06.4"; 20°26'29.6"; 664 m a.s.l., 156/18.09.2016.
- 25.8 *Pleurotus pulmonarius*, OD/III D/1.0/*Fagus sylvatica*, *Phyllitido-Aceretum*, 49°25'04.2"; 20°26'30.3"; 684 m a.s.l., 003/18.06.2016.
- 25.9 *Suillellus luridus*, S/III W/G, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'19.8"; 20°26'25.5"; 609 m a.s.l., 097/06.08.2016.

26. Sowie Skalki Mt., forest

- 26.1 *Pluteus salicinus*, S/II D/0,5/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'52.7"; 20°25'50.3"; 542 m a.s.l., 384/27.07.2017.

27. Stolarzówka, meadows

- 27.1 *Suillellus luridus*, S/III W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'45.0"; 20°25'10.9"; 649 m a.s.l., 001/12.07.2016.

28. Stus, meadows and forest

- 28.1 *Hygrophorus pudorinus*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'10.6"; 20°20'59.8"; 738 m a.s.l., 213/25.10.2016.
- 28.2 *Lepista nuda*, F/I/G, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'11.1"; 20°20'41.7"; 681 m a.s.l., 211/25.10.2016.
- 28.3 *Mycena zephrus*, F/III W/0,5/*Abies alba*, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'10.6"; 20°20'59.8"; 738 m a.s.l., 212/25.10.2016.
- 28.4 *Russula chloroides*, S/I/G, *Campanula patula-Trisetum flavescens*, 49°25'17.7"; 20°20'31.9"; 689 m a.s.l., 214a/25.10.2016.

29. Szkółka Leśna, forest near forest nursery

- 29.1 *Amanita muscaria*, S/I/G, artificially regenerated forest with thermophilous species in herb-layer, 49°25'30.0"; 20°21'08.6"; 626 m a.s.l., 198/19.10.2016.
- 29.2 *Amanita rubescens*, S/I/G/ unidentified tree, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'21.8"; 20°21'34.1"; 648 m a.s.l., 375/19.07.2017.
- 29.3 *Gymnopus confluens*, F/I/G, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'28.0"; 20°21'15.0"; 630 m a.s.l., 101/06.08.2016.
- 29.4 *Hydnum repandum*, F/III W/G, artificially regenerated forest with thermophilous species in herb-layer, 49°25'30.0"; 20°21'08.6"; 626 m a.s.l., 200/19.10.2016.
- 29.5 *Inocybe splendens*, F/I/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°25'27.9"; 20°21'15.1"; 630 m a.s.l., 100/06.08.2016.
- 29.6 *Lactarius piperatus*, S/III W/G, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'27.1"; 20°21'17.0"; 631 m a.s.l., 202/19.10.2016.
- 29.7 *Lactarius piperatus*, F/II W/G, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'27.1"; 20°21'17.0"; 631 m a.s.l., 201/19.10.2016.
- 29.8 *Lactarius salmonicolor*, S/I/G, artificially regenerated forest with thermophilous species in herb-layer, 49°25'30.0"; 20°21'08.6"; 626 m a.s.l., 196/19.10.2016.
- 29.9 *Lactarius scrobiculatus*, F/III W/G, artificially regenerated forest with thermophilous species in herb-layer, 49°25'30.0"; 20°21'08.6"; 626 m a.s.l., 199/19.10.2016.
- 29.10 *Megacollybia platyphylla*, F/II W/0,1/*Abies alba*, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'18.0"; 20°21'17.9"; 680 m a.s.l., 001/31.07.2016.
- 29.11 *Mycena viridimarginata*, F/I/0,3/*Abies alba*, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'21.9"; 20°21'33.4"; 646 m a.s.l., 373/18.07.2017.
- 29.12 *Russula olivacea*, F/III W/G, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'21.9"; 20°21'33.4"; 646 m a.s.l., 407/03.08.2017.
- 29.13 *Russula olivacea*, S/I/G, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'21.9"; 20°21'33.4"; 646 m a.s.l., 393/29.07.2017.

30. Szopka, mountain pass, meadows and forest

- 30.1 *Lycoperdon mammiforme*, F/II W/G, *Carici albae-Fagetum abietetosum* var. *typicum*, 49°25'05.0"; 20°24'21.5"; 755 m a.s.l., 472/23.07.2018.
- 30.2 *Marasmius oreades*, F/II W/0/rotting plants, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'08.9"; 20°24'23.6"; 784 m a.s.l., 007/22.06.2016.

31. Toporzyskowe, forest

- 31.1 *Echinoderma asperum*, S/II W/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant, 49°25'47.2"; 20°25'15.3"; 640 m a.s.l., 110/27.08.2016.
- 31.2 *Tricholoma sejunctum*, F/I/G, *Dentario glandulosae-Fagetum abietetosum*, floristically poor variant 49°25'47.2"; 20°25'15.3"; 640 m a.s.l., 109/27.08.2016.

32. Trzy Korony Mt., meadows and forest

- 32.1 *Asterostroma cervicolor*, S/I/0,3/*Abies alba*, *Dentario glandulosae-Fagetum abietetosum* var. *typicum*, 49°25'01.5"; 20°24'46.9"; 884 m a.s.l., 207/20.10.2016.
- 32.2 *Hyphodontia spathulata*, S/II W/1,0/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°24'50.6"; 20°24'44.6"; 930 m a.s.l., 003/12.07.2016.

- 32.3 *Mycena renati*, OD/I/0,3/*Acer pseudoplatanus*, *Dentario glandulosae-Fagetum lunarietosum*, 49°24'56.5"; 20°24'59.8"; 854 m a.s.l., 350/01.06.2017.
- 32.4 *Phallus impudicus*, S/II W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°24'50.6"; 20°24'44.6"; 930 m a.s.l., 004/12.07.2016.
- 33. Tylskie Góry, meadows and forest**
- 33.1 *Pholiota mutabilis*, OD/II W/0,4/G, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'10.8"; 20°23'25.2"; 796 m a.s.l., 403/30.07.2017.
- 33.2 *Pleurotus pulmonarius*, F/III D/1,0/*Sorbus arcuaria*, *Caltha laeta-Chaerophyllum hirsutum*, 49°25'10.1"; 20°23'36.6"; 774 m a.s.l., 007/13.07.2016.
- 34. Ule, meadows and forest**
- 34.1 *Amanita muscaria*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°25'28.8"; 20°20'23.5"; 654 m a.s.l., 127/03.09.2016.
- 34.2 *Lactarius scrobiculatus*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°25'28.8"; 20°20'23.5"; 654 m a.s.l., 124/03.09.2016.
- 34.3 *Macrolepiota procera*, S/I/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°25'28.8"; 20°20'23.5"; 654 m a.s.l., 126/3.09.2016.
- 34.4 *Xerocomus pascuus*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°25'28.8"; 20°20'23.5"; 654 m a.s.l., 125/03.09.2016.
- 35. Upszar, meadows and forest**
- 35.1 *Bovistella utrififormis*, S/III W/G, *Dactylis glomerata-Poa trivialis*, 49°25'04.8"; 20°19'56.0"; 643 m a.s.l., 255/25.03.2017.
- 36. Wąwóz Sobczański, ravine**
- 36.1 *Lactarius piperatus*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'50.7"; 20°24'16.6"; 621 m a.s.l., 204/20.10.2016.
- 36.2 *Lactarius salmonicolor*, F/II W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'50.7"; 20°24'16.6"; 621 m a.s.l., 203/20.10.2016.
- 36.3 *Tricholoma fulvum*, F/III W/G, *Carici albae-Fagetum abietetosum*, floristically poor variant, 49°24'50.7"; 20°24'16.6"; 654 m a.s.l., 205/20.10.2016.
- 37. Wielka Dolina, meadows, woodland and forest**
- 37.1 *Amanita rubescens*, F/III W/G, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'25.9"; 20°24'26.5"; 703 m a.s.l., 009/12.07.2016.
- 37.2 *Chlorophyllum rhacodes*, S/III W/0/hay, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'11.9"; 20°24'01.8"; 786 m a.s.l., 378/20.07.2017.
- 37.3 *Clitocybe nebularis*, F/III W/0/hay on a mowed meadow, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'11.9"; 20°24'01.8"; 783 m a.s.l., 360/24.06.2017.
- 37.4 *Craterellus cornucopioides*, OD/III W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'11.9"; 20°24'01.6"; 787 m a.s.l., 435/30.08.2017.
- 37.5 *Lacrymaria lacrymabunda*, OD/III W/0/forest bedding, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'11.9"; 20°24'01.6"; 787 m a.s.l., 455/29.09.2017.
- 37.6 *Mycetinis alliaceus*, F/II/0/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'12.8"; 20°24'22.8"; 756 m a.s.l., 006/12.07.2016.
- 37.7 *Pholiota limonella*, S/III W/1,2/*Alnus incana*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'11.9"; 20°24'15.5"; 760 m a.s.l., 462/16.10.2017.
- 37.8 *Pleurotus pulmonarius*, F/III W/0,4/ *Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'23.9"; 20°24'02.9"; 765 m a.s.l., 361/24.06.2017.
- 37.9 *Pluteus cervinus*, F/II W/0,3/*Acer pseudoplatanus*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'12.8"; 20°24'22.8"; 756 m a.s.l., 005/12.07.2016.
- 37.10 *Pluteus salicinus*, S/II W/0,3/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'11.9"; 20°24'01.6"; 787 m a.s.l., 417/10.08.2017.
- 37.11 *Peziza arvensis*, S/II W/0/ hay, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'12.7"; 20°24'02.9"; 782 m a.s.l., 006/22.06.2016.
- 38. Wyrobek, meadows and woodland**
- 38.1 *Clitocybe odora*, F/I/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'10.6"; 20°24'33.9"; 778 m a.s.l., 111/27.08.2016.
- 38.2 *Hygrophorus pudorinus*, F/III W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'15.0"; 20°24'35.7"; 741 m a.s.l., 461/16.10.2017.
- 38.3 *Hymenopellis radicata*, S/II W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'11.1"; 20°24'34.5"; 775 m a.s.l., 008/22.06.2016.
- 38.4 *Lycoperdon pyriforme*, F/III W/0,8/*Fagus sylvatica*, *Corylus avellana-Oxalis acetosella* end *Corylus avellana-Aegopodium podagraria*, 49°25'10.8"; 20°24'41.1"; 786 m a.s.l., 405/31.07.2017.
- 38.5 *Mycena renati*, OD/I/0,5/ *Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'19.2"; 20°24'47.1"; 682 m a.s.l., 352/01.06.2017.
- 38.6 *Pholiota mutabilis*, F/I/0/stick, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'10.0"; 20°24'55.8"; 748 m a.s.l., 351/01.06.2017.
- 38.7 *Pholiota squarrosoides*, F/III W/0,1/*Abies alba*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'22.4"; 20°24'38.1"; 707 m a.s.l., 218/29.10.2016.
- 38.8 *Pleurotus pulmonarius*, SD/III D/0,5/*Fagus sylvatica*, *Campanula patula-Trisetum flavescens*, 49°25'17.9"; 20°24'34.9"; 726 m a.s.l., 001/08.07.2016.
- 39. Za Piecem, meadows and woodland**
- 39.1 *Entoloma clypeatum*, OD/II W/G, *Prunus spinosa-Cornus sanguinea*, 49°25'09.5"; 20°27'12.2"; 438 m a.s.l., 328/21.05.2017.
- 39.2 *Morchella esculenta*, F/II W/G, *Prunus spinosa-Cornus sanguinea*, 49°25'11.1"; 20°27'13.4"; 443 m a.s.l., 330/21.05.2017.
- 40. Zagroń, meadows and forest**
- 40.1 *Clitopilus prunulus*, F/II W/G, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'35.5"; 20°23'58.0"; 667 m a.s.l., 427/17.08.2017.
- 40.2 *Lycoperdon pyriforme*, F/III W/0/ *Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum*, floristically poor variant, 49°25'18.1"; 20°23'38.8"; 681 m a.s.l., 288/03.05.2017.
- 40.3 *Pleurotus pulmonarius*, OD/I/1,0/*Fagus sylvatica*, *Dentario glandulosae-Fagetum typicum* var. *typicum*, 49°25'20.9"; 20°23'40.5"; 663 m a.s.l., 368/01.07.2017.

APPENDIX II

A LIST OF BEETLES AND ASSOCIATED FUNGI

List compiled according to the scheme: beetle species – species of fungi, [ID number/date of collection, number of specimens]

1. Staphylinidae

- Acrulia inflata* (GYLLENHAL, 1813) – *Hyphodontia spathulata* [003/12.07.2016, 1], *Pleurotus pulmonarius* [007/13.07.2016, 1; 368/01.07.2017, 1]
- Agaricochara latissima* (STEPHENS, 1832) – *Schizopora paradoxa* [165/20.09.2016, 1]
- Aleochara fumata* GRAVENHORST, 1802 – *Chlorophyllum rhacodes* [378/20.07.2017, 1], *Morchella esculenta* [327/21.05.2017, 1], *Pleurotus pulmonarius* [116/02.09.2016, 1], *Suillellus luridus* [001/12.07.2016, 1]
- Aleochara sparsa* HEER, 1839 – *Russula olivacea* [407/03.08.2017, 1]
- Anotylus sculpturatus* (GRAVENHORST, 1806) – *Psathyrella candolleana* [319/17.05.2017, 1]
- Anthobium atrocephalum* (GYLLENHAL, 1827) – *Armillaria lutea* [236/21.11.2016, 1], *Clitocybe nebularis* [238/21.11.2016, 1], *Flammulina velutipes* [248/26.11.2016, 1], *Tremella mesenterica* [334/26.05.2017, 1]
- Anthobium melanocephalum* (ILLYGER, 1794) – *Hygrophorus pudorinus* [213/25.10.2016, 4], *Lactarius piperatus* [202/19.10.2016, 5]
- Atheta aeneicollis* (SHARP, 1869) – *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 1]
- Atheta aeneipennis* (THOMSON, 1856) – *Hygrophorus pudorinus* [213/25.10.2016, 5], *Lactarius piperatus* [202/19.10.2016, 4]
- Atheta amicola* (STEPHENS, 1832) – *Chlorophyllum rhacodes* [378/20.07.2017, 3]
- Atheta britanniae* BERNHAUER & SCHEERPELTZ, 1926 – *Amanita muscaria* [127/03.09.2016, 2], *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 6], *Clitocybe nebularis* [216/29.10.2016, 26; 217/29.10.2016, 6; 176/02.10.2016, 4], *Craterellus cornucopioides* [435/30.08.2017, 6], *Echinoderma asperum* [170/28.09.2016, 1], *Hydnum repandum* [200/19.10.2016, 1], *Hypholoma fasciculare* [135a/04.09.2016, 1], *Lactarius piperatus* [147/14.09.2016, 3], *Lactarius scrobiculatus* [199/19.10.2016, 1], *Phallus impudicus* [154/18.09.2016, 6], *Pholiota squarrosa* [187/07.10.2016, 2], *Pholiota squarrosoides* [218/29.10.2016, 5], *Russula olivacea* [411/07.08.2017, 2], *Tricholoma orirubens* [131/04.09.2016, 4]
- Atheta canescens* (SHARP, 1869) – *Lactarius piperatus* [415/08.08.2017, 1], *Russula nigricans* [420/14.08.2017, 1]
- Atheta castanoptera* (MANNERHEIM, 1830) – *Agaricus augustus* [004/13.07.2016, 2], *Amanita muscaria* [132/04.09.2016, 8], *Amanita rubescens* [375/19.07.2017, 56], *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 15], *Boletus reticulatus* [002/13.07.2016, 44; 003/13.07.2016, 1], *Caloboletus calopus* [004/30.07.2016, 3], *Chlorophyllum rhacodes* [378/20.07.2017, 19], *Clitocybe nebularis* [216/29.10.2016, 7; 217/29.10.2016, 4; 360a/24.06.2017, 18; 360b/24.06.2017, 29], *Entoloma clypeatum* [328/21.05.2017, 4], *Flammulina velutipes* [248/26.11.2016, 1], *Hydnum repandum* [200/19.10.2016, 32], *Hygrophorus pudorinus* [461/16.10.2017, 8], *Hypholoma fasciculare* [135/04.09.2016, 10], *Lacrymaria lacrymabunda* [455/29.09.2017, 20], *Lactarius piperatus* [201/19.10.2016, 12; 202/19.10.2016, 16; 412/07.08.2017, 23; 147/14.09.2016, 1; 002/29.07.2016, 4; 416/08.08.2017, 5; 415/08.08.2017, 78, 204/20.10.2016, 3], *Lactarius scrobiculatus* [129/04.09.2016, 4; 199/19.10.2016, 44; 124/03.09.2016, 1], *Lactarius zonarioides* [414/08.08.2017, 6], *Mycena zephirus* [212/25.10.2016, 1], *Paxillus rubicundulus* [001/19.06.2016, 6], *Peziza vesiculosa* [318/17.05.2017, 5], *Phallus impudicus* [186/07.10.2016, 5], *Pleurotus pulmonarius* [001/08.07.2016, 2; 004/22.06.2016, 15; 007/13.07.2016, 30; 361/24.06.2017, 34], *Russula nigricans* [420/14.08.2017, 13], *Russula olivacea* [407/03.08.2017, 44; 393/29.07.2017, 1; 411/07.08.2017, 4], *Suillellus luridus* [001/12.07.2016, 3; 001/13.07.2016, 3; 419/14.08.2017, 8], *Tricholoma orirubens* [131/04.09.2016, 2]
- Atheta cauta* (ERICHSON, 1837) – *Pleurotus pulmonarius* [007/13.07.2016, 2]
- Atheta celata* (ERICHSON, 1837) – *Amanita rubescens* [375/19.07.2017, 2], *Clitopilus prunulus* [427/17.08.2017, 1], *Lactarius piperatus* [412/07.08.2017, 23], *Russula olivacea* [411/07.08.2017, 4]
- Atheta coriaria* (KRAATZ, 1856) – *Pleurotus pulmonarius* [007/13.07.2016, 5]
- Atheta corvina* (THOMSON, 1856) – *Clitocybe nebularis* [216/29.10.2016, 1], *Craterellus cornucopioides* [435/30.08.2017, 3], *Flammulina velutipes* [248/26.11.2016, 1], *Paralepista flaccida* [215/29.10.2016, 1], *Suillellus luridus* [001/12.07.2016, 1]
- Atheta crassicornis* (FABRICIUS, 1793) – *Agaricus augustus* [004/13.07.2016, 2], *Amanita muscaria* [132/04.09.2016, 3], *Amanita rubescens* [375/19.07.2017, 6], *Armillaria lutea* [122/03.09.2016, 1], *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 6], *Boletus reticulatus* [002/13.07.2016, 4], *Chlorophyllum rhacodes* [378/20.07.2017, 67], *Clitocybe nebularis* [176/02.10.2016, 6; 216/29.10.2016, 17; 193/15.10.2016, 2; 360a/24.06.2017, 16; 360b/24.06.2017, 44], *Clitopilus prunulus* [427/17.08.2017, 1], *Echinoderma asperum* [140/28.09.2016, 3], *Entoloma clypeatum* [328/21.05.2017, 26], *Flammulina velutipes* [248/26.11.2016, 10], *Hydnum repandum* [200/19.10.2016, 56], *Hygrophorus agathosmus* [174/02.10.2016, 3], *Hygrophorus pudorinus* [213/25.10.2016, 4], *Hypholoma fasciculare* [135a/04.09.2016, 4], *Lacrymaria lacrymabunda* [455/29.09.2017, 3], *Lactarius piperatus* [201/19.10.2016, 3; 202/19.10.2016, 38; 412/07.08.2017, 9; 415/08.08.2017, 56; 416/08.08.2017, 7; 147/14.09.2016, 6; 002/29.07.2016, 5; 204/20.10.2016, 4], *Lactarius scrobiculatus* [129/04.09.2016, 12; 199/19.10.2016, 16], *Lentinellus ursinus* [195/15.10.2016, 10], *Lepista nuda* [243/23.11.2016, 4], *Megacollybia platyphylla* [163/18.09.2016, 1], *Morchella esculenta* [327/21.05.2017, 28; 330/21.05.2017, 19], *Mycena rosea* [448/16.09.2017, 4], *Mycena zephirus* [212/25.10.2016, 4], *Paralepista flaccida* [215/29.10.2016, 3], *Paxillus rubicundulus* [001/19.06.2016, 8], *Peziza vesiculosa* [318/17.05.2017, 9; 321/21.05.2017, 3], *Phallus impudicus* [186/07.10.2016, 12], *Pholiota squarrosa* [187/07.10.2016, 8]; *Pholiota squarrosoides* [218/29.10.2016, 2], *Pleurotus pulmonarius* [001/08.07.2016, 5; 007/13.07.2016, 13; 361/24.06.2017, 9], *Russula nigricans* [420/14.08.2017, 16], *Russula olivacea* – [379/20.07.2017, 2; 411/07.08.2017, 3; 407/03.08.2017, 21], *Suillellus luridus* [001/12.07.2016, 2; 419/14.08.2017, 2], *Tricholoma equestre* var. *populinum* [138/04.09.2016, 1], *Volvopluteus gloiocephalus* [343/29.05.2017, 1]
- Atheta dadopora* THOMSON, 1867 – *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 9], *Boletus reticulatus*

- [002/13.07.2016, 1], *Chlorophyllum rhacodes* [378/20.07.2017, 5], *Entoloma clypeatum* [328/21.05.2017, 1], *Hydnum repandum* [200/19.10.2016, 4], *Lactarius piperatus* [415/08.08.2017, 9; 416/08.08.2017, 4], *Pleurotus pulmonarius* [007/13.07.2016, 17; 004/22.06.2016, 1], *Russula nigricans* [420/14.08.2017, 1], *Russula olivacea* [407/03.08.2017, 12]
- Atheta depressicollis*** FAUVEL, 1875 – *Clitocybe nebularis* [216/29.10.2016, 1]
- Atheta euryptera*** (STEPHENS, 1832) – *Porphyrellus porphyrosporus* [091/06.08.2016, 1]
- Atheta fungicola*** (THOMSON, 1852) – *Amanita rubescens* [092/06.08.2016, 1], *Echinoderma asperum* [110/27.08.2016, 1], *Phallus impudicus* [154/18.09.2016, 1], *Pholiota mutabilis* [333/26.05.2017, 1], *Russula olivacea* [407/03.08.2017, 4]
- Atheta fungivora*** (THOMSON, 1867) – *Clitocybe nebularis* [216/29.10.2016, 1], *Flammulina velutipes* [248/26.11.2016, 2]
- Atheta gagatina*** (BAUDI, 1848) – *Amanita muscaria* [132/04.09.2016, 1], *Craterellus cornucopioides* [435/30.08.2017, 1], *Entoloma clypeatum* [328/21.05.2017, 3], *Gymnopus* sp. [332/21.05.2017, 1], *Hypholoma fasciculare* [135/04.09.2016, 1], *Lactarius piperatus* [412/07.08.2017, 5], *Lactarius scrobiculatus* [129/04.09.2016, 7], *Mycena rosea* [448/16.09.2017, 1], *Paxillus rubicundulus* [001/19.06.2016, 1], *Russula olivacea* [411/07.08.2017, 2; 407/03.08.2017, 1], *Tapinella atrotomentosa* [133/04.09.2016, 1], *Xerocomus pascuus* [125/03.09.2016, 1]
- Atheta laticollis*** (STEPHENS, 1832) – *Armillaria lutea* [236/21.11.2016, 1]
- Atheta liturata*** (STEPHENS, 1832) – *Lactarius piperatus* [147/14.09.2016, 2]
- Atheta marcida*** (ERICHSON, 1837) – *Amanita muscaria* [127/03.09.2016, 1], *Clitocybe nebularis* [216/29.10.2016, 18; 217/29.10.2016, 6; 193/15.10.2016, 7], *Flammulina velutipes* [248/26.11.2016, 1], *Hydnum repandum* [145/14.09.2016, 2; 224/30.10.2016, 6; 200/19.10.2016, 17], *Hygrophorus agathosmus* [174/02.10.2016, 6], *Lacrymaria lacrymabunda* [455/29.09.2017, 44], *Lactarius piperatus* [147/14.09.2016, 11; 202/19.10.2016, 18], *Lactarius scrobiculatus* [129/04.09.2016, 2], *Lentinellus ursinus* [195/15.10.2016, 1], *Phallus impudicus* [186/07.10.2016, 24], *Pholiota squarrosoides* [218/29.10.2016, 12], *Pleurotus pulmonarius* [194/15.10.2016, 1], *Tricholoma saponaceum* [141/14.09.2016, 1]
- Atheta nigra*** (KRAATZ, 1856) – *Peziza vesiculosa* [318/17.05.2017, 1]
- Atheta nigritula*** (GRAVENHORST, 1802) – *Amanita muscaria* [132/04.09.2016, 2], *Amanita rubescens* [375/19.07.2017, 40], *Boletus reticulatus* [002/13.07.2016, 2; 003/13.07.2016, 1], *Clitocybe nebularis* [193/15.10.2016, 5], *Hydnum repandum* [145/14.09.2016, 1; 200/19.10.2016, 5], *Hygrophorus pudorinus* [213/25.10.2016, 7], *Lactarius piperatus* [201/19.10.2016, 2; 412/07.08.2017, 18; 415/08.08.2017, 10; 416/08.08.2017, 2; 147/14.09.2016, 35; 204/20.10.2016, 5], *Lactarius scrobiculatus* [124/03.09.2016, 3; 129/04.09.2016, 15], *Lactarius zonarioides* [414/08.08.2017, 4], *Lentinellus ursinus* [195/15.10.2016, 2], *Morchella esculenta* [330/21.05.2017, 2], *Russula nigricans* [420/14.08.2017, 3], *Russula olivacea* [411/07.08.2017, 10; 393/29.07.2017, 2; 407/03.08.2017, 24], *Tricholoma aurantium* [130/04.09.2016, 2]
- Atheta orbata*** (ERICHSON, 1837) – *Peziza arvernensis* [006/22.06.2016, 1]
- Atheta paleola*** (ERICHSON, 1837) – *Paxillus rubicundulus* [001/19.06.2016, 2], *Russula olivacea* [411/07.08.2017, 1]
- Atheta pallidicornis*** (THOMSON, 1856) – *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 3], *Tricholoma aurantium* [130/04.09.2016, 1], *Hyphodontia spathulata* [003/12.07.2016, 1]
- Atheta paracrassicornis*** BRUNDIN, 1954 – *Amanita rubescens* [009/12.07.2016, 6], *Boletus reticulatus* [002/13.07.2016, 7; 003/13.07.2016, 3], *Caloboletus calopus* [004/30.07.2016, 5], *Clitocybe nebularis* [217/29.10.2016, 5; 360a/24.06.2017, 2; 360b/24.06.2017, 8], *Flammulina velutipes* [248/26.11.2016, 5], *Hydnum repandum* [227/11.11.2016, 1; 224/30.10.2016, 10], *Lactarius piperatus* [416/08.08.2017, 9], *Lactarius scrobiculatus* [129/04.09.2016, 1; 199/19.10.2016, 8], *Lentinellus ursinus* [195/15.10.2016, 3], *Megacollybia platyphylla* [163/18.09.2016, 1], *Pholiota squarrosoides* [218/29.10.2016, 9], *Russula nigricans* [420/14.08.2017, 1], *Suillellus luridus* [001/12.07.2016, 3], *Xerocomus pascuus* [001/22.06.2016, 1]
- Atheta picipes*** (THOMSON, 1856) – *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 1], *Chlorophyllum rhacodes* [378/20.07.2017, 4], *Craterellus cornucopioides* [435/30.08.2017, 2], *Lacrymaria lacrymabunda* [455/29.09.2017, 2], *Pleurotus pulmonarius* [007/13.07.2016, 17], *Russula olivacea* [407/03.08.2017, 2]
- Atheta ravilla*** (ERICHSON, 1839) – *Amanita muscaria* [132/04.09.2016, 1], *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 1], *Chlorophyllum rhacodes* [378/20.07.2017, 2], *Clitocybe nebularis* [216/29.10.2016, 2], *Flammulina velutipes* [248/26.11.2016, 1], *Lacrymaria lacrymabunda* [455/29.09.2017, 1], *Lactarius scrobiculatus* [199/19.10.2016, 2], *Pleurotus pulmonarius* [007/13.07.2016, 5; 004/22.06.2016, 1], *Russula olivacea* [407/03.08.2017, 1]
- Atheta sodalis*** (ERICHSON, 1837) – *Amanita rubescens* [009/12.07.2016, 1], *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 6], *Chlorophyllum rhacodes* [378/20.07.2017, 4; 102/07.08.2016, 1], *Clitocybe nebularis* [216/29.10.2016, 7; 217/29.10.2016, 9; 176/02.10.2016, 2; 360a/24.06.2017, 2; 360b/24.06.2017, 5], *Craterellus cornucopioides* [435/30.08.2017, 4], *Hydnum repandum* [224/30.10.2016, 4], *Hygrophorus agathosmus* [174/02.10.2016, 10], *Hygrophorus pudorinus* [461/16.10.2017, 3], *Lacrymaria lacrymabunda* [455/29.09.2017, 2], *Lactarius piperatus* [412/07.08.2017, 4; 416/08.08.2017, 3], *Lactarius scrobiculatus* [124/03.09.2016, 1], *Lepista nuda* [211/25.10.2016, 1], *Paralepista flaccida* [215/29.10.2016, 1], *Phallus impudicus* [154/18.09.2016, 5], *Pholiota squarrosoides* [218/29.10.2016, 2], *Pleurotus pulmonarius* [001/08.07.2016, 1; 007/13.07.2016, 3; 004/22.06.2016, 1], *Russula olivacea* [407/03.08.2017, 3], *Suillellus luridus* [001/12.07.2016, 1]
- Atheta subtilis*** (SCRIBA, 1866) – *Amanita rubescens* [375/19.07.2017, 2]
- Atheta taxiceroides*** MÜNSTER, 1932 – *Clitocybe nebularis* [216/29.10.2016, 1; 217/29.10.2016, 1], *Flammulina velutipes* [248/26.11.2016, 2]
- Aulonothroscus brevicollis*** (BONVOULOIR, 1859) – *Megacollybia platyphylla* [005/07.07.2016, 1]
- Autalia longicornis*** SCHEERPELTZ, 1947 – *Clitocybe nebularis* [216/29.10.2016, 1], *Echinoderma asperum* [170/28.09.2016, 2], *Hydnum repandum* [145/14.09.2016, 9; 227/11.11.2016, 1], *Lacrymaria lacrymabunda* [455/29.09.2017, 3], *Lactarius piperatus* [201/19.10.2016, 2], *Lactarius scrobiculatus* [129/04.09.2016, 1], *Pholiota squarrosa* [187/07.10.2016, 1], *Pholiota squarrosoides*

- [218/29.10.2016, 1], *Pleurotus pulmonarius* [007/13.07.2016, 8], *Tricholoma saponaceum* [141/14.09.2016, 4]
- Bisnius fimetarius** (GRAVENHORST, 1802) – *Peziza vesiculosa* [318/17.05.2017, 3; 344/29.05.2017, 1], *Pleurotus pulmonarius* [007/13.07.2016, 4]
- Bolitochara obliqua** ERICHSON, 1837 – *Clitocybe nebularis* [217/29.10.2016, 1], *Flammulina velutipes* [248/26.11.2016, 1], *Hydropus atramentosus* [119/18.08.2016, 1], *Pleurotus pulmonarius* [004/22.06.2016, 1; 194/15.10.2016, 1; 003/18.06.2016, 1]
- Bryophacis crassicornis** (MÄKLIN, 1847) – *Amanita rubescens* [375/19.07.2017, 3], *Lactarius piperatus* [412/07.08.2017, 2]
- Carphacis striatus** (OLIVIER, 1795) – *Chlorophyllum rhacodes* [378/20.07.2017, 1], *Mycena rosea* [448/16.09.2017, 1]
- Gyrophaena affinis** MANNERHEIM, 1830 – *Amanita rubescens* [009/12.07.2016, 1], *Clitocybe nebularis* [360a/24.06.2017, 30; 360b/24.06.2017, 52], *Coprinellus disseminatus* [308/16.05.2017, 2], *Crepidotus mollis* [311/16.05.2017, 8], *Gerronema strombodes* [001/29.07.2016, 1], *Gymnopus confluens* [099/06.08.2016, 1; 101/07.08.2016, 18], *Gymnopus sp.* [332/21.05.2017, 13], *Marasmius oreades* [007/22.06.2016, 37], *Megacollybia platyphylla*– [007/25.06.2016, 24], *Mycena galericulata* [448/16.09.2017, 3], *Mycena rosea* [448/16.09.2017, 4], *Paxillus rubicundulus* [001/19.06.2016, 92], *Pholiota mutabilis* [347/29.05.2017, 27; 009/22.06.2016, 2], *Pleurotus pulmonarius* [001/08.07.2016, 122], *Pluteus cervinus* [005/12.07.2016, 33], *Pluteus salicinus* [417/10.08.2017, 3; 002/22.06.2016, 3] *Psathyrella candolleana* [319/17.05.2017, 6], *Volvopluteus gloiocephalus* [343/29.05.2017, 1]
- Gyrophaena bihamata** THOMSON, 1867 – *Amanita rubescens* [092/06.08.2016, 1], *Armillaria lutea* [122/03.09.2016, 1], *Entoloma clypeatum* [328/21.05.2017, 2], *Lactarius piperatus* [003/25.06.2016, 7], *Lactarius zonarioides* [414/08.08.2017, 1], *Pholiota mutabilis* [388/27.08.2017, 4], *Volvopluteus gloiocephalus* [343/29.05.2017, 7]
- Gyrophaena boleti** (LINNAEUS, 1758) – *Hymenopellis radicata* [008/22.06.2016, 1]
- Gyrophaena congrua** ERICHSON, 1837 – *Lactarius piperatus* [002/29.07.2016, 7], *Mycena rosea* [113/01.09.2016, 7; 448/16.09.2017, 36]
- Gyrophaena fasciata** (MARSHAM, 1802) – *Armillaria lutea* [122/03.09.2016, 4; 167/20.09.2016, 13], *Coprinellus disseminatus* [308/16.05.2017, 8], *Crepidotus mollis* [307/16.05.2017, 7; 311/16.05.2017, 3], *Echinoderma asperum* [140/13.09.2016, 270; 170/28.09.2016, 153], *Entoloma clypeatum* [328/21.05.2017, 17], *Gerronema strombodes* [001/29.07.2016, 96], *Leucocybe connata* [172/28.09.2016, 97], *Mycena renati* [304/16.05.2017, 3], *Mycena rosea* [113/01.09.2016, 3], *Paxillus rubicundulus* [001/19.06.2016, 45], *Pholiota mutabilis* [347/29.05.2017, 654; 009/22.06.2016, 3; 388/27.08.2017, 674], *Pleurotus pulmonarius* [368/01.07.2017, 3] *Pluteus salicinus* [417/10.08.2017, 11], *Psathyrella candolleana* [319/17.05.2017, 75], *Tricholoma fulvum* [205/20.10.2016, 3], *Volvopluteus gloiocephalus* [343/29.05.2017, 94]
- Gyrophaena gentilis** ERICHSON, 1839 – *Amanita rubescens* [009/12.07.2016, 1], *Armillaria lutea* [122/03.09.2016, 4], *Clitocybe nebularis* [193/15.10.2016, 2; 360b/24.06.2017, 1], *Crepidotus mollis* [311/16.05.2017, 3], *Gymnopus sp.* [332/21.05.2017, 3], *Megacollybia platyphylla* [001/31.07.2016, 3; 007/25.06.2016, 27; 093/06.08.2016, 21; 163/18.09.2016, 1; 096/06.08.2016, 9], *Mycena galericulata* [317/17.05.2017, 9], *Mycena renati* [001/28.05.2016, 8; 350/01.06.2017, 55; 352/01.06.2017, 152; 304/16.05.2017, 10], *Mycena viridimarginata* [373/18.07.2017, 1], *Mycetinis alliaceus* [006/12.07.2016, 3; 094/06.08.2016, 8], *Pleurotus pulmonarius* [001/08.07.2016, 1], *Pluteus cervinus* [005/12.07.2016, 6], *Pluteus salicinus* [417/10.08.2017, 8; 002/22.06.2016, 5], *Tricholoma equestre* var. *populinum* [138/04.09.2016, 2]
- Gyrophaena joyi** WENDELER, 1924 – *Armillaria lutea* [122/03.09.2016, 2], *Auricularia auricula judae* [355/12.06.2017, 2], *Crepidotus mollis* [307/16.05.2017, 14; 311/16.05.2017, 11], *Mycena renati* [304/16.05.2017, 32], *Mycena rosea* [113/01.09.2016, 6]
- Gyrophaena joyioides** WÜSTHOFF, 1937 – *Entoloma clypeatum* [328/21.05.2017, 4], *Inocybe splendens* [100/07.08.2016, 3]
- Gyrophaena manca** ERICHSON, 1839 – *Clitocybe nebularis* [360a/24.06.2017, 3; 360b/24.06.2017, 43], *Crepidotus applanatus* [009/12.07.2016, 2], *Echinoderma asperum* [140/13.09.2016, 2; 170/28.09.2016, 2], *Gerronema strombodes* [001/29.07.2016, 1], *Megacollybia platyphylla* [007/25.06.2016, 18; 093/06.08.2016, 1; 001/31.07.2016, 1], *Pholiota mutabilis* [347/29.05.2017, 4; 363/24.06.2017, 7; 388/27.08.2017, 1], *Tricholoma sejunctum* [109/27.08.2016, 1]
- Gyrophaena minima** ERICHSON, 1837 – *Clitocybe nebularis* [360a/24.06.2017, 8; 360b/24.06.2017, 27], *Gerronema strombodes* [001/29.07.2016, 3], *Gymnopus sp.* [332/21.05.2017, 2], *Paxillus rubicundulus* [001/19.06.2016, 2], *Pholiota mutabilis* [347/29.05.2017, 56; 363/24.06.2017, 48], *Pholiota squarrosa* [151/12.09.2016, 1], *Pluteus salicinus* [417/10.08.2017, 139], *Rhodocollybia maculata* [179/02.10.2016, 2], *Tricholomopsis rutilans* [121/18.08.2016, 2], *Volvopluteus gloiocephalus* [343/29.05.2017, 2]
- Gyrophaena nana** (PAYKULL, 1800) – *Echinoderma asperum* [140/13.09.2016, 4], *Entoloma clypeatum* [328/21.05.2017, 6], *Lactarius pterosporus* [003/25.06.2016, 1], *Leucocybe connata* [172/28.09.2016, 2], *Mycena galericulata* [317/17.05.2017, 1], *Pluteus cervinus* [005/12.07.2016, 1], *Psathyrella candolleana* [319/17.05.2017, 2]
- Gyrophaena polita** (GRAVENHORST, 1802) – *Entoloma clypeatum* [328/21.05.2017, 1]
- Gyrophaena poweri** CROTH, 1867 – *Amanita muscaria* [127/03.09.2016, 1], *Armillaria lutea* [122/03.09.2016, 1], *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 1], *Clitocybe nebularis* [360a/24.06.2017, 4; 360b/24.06.2017, 13], *Clitocybe odora* [111/27.08.2016, 6], *Entoloma clypeatum* [328/21.05.2017, 4], *Gerronema strombodes* [001/29.07.2016, 5; 118/02.09.2016, 3], *Hebeloma sinapizans* [447/14.09.2017, 16], *Hypholoma fasciculare* [005/18.06.2016, 15; 135/04.09.2016, 1], *Hypholoma sublateritium* [128/03.09.2016, 35], *Lactarius piperatus* [002/29.07.2016, 3], *Lactarius salmonicolor* [203/20.10.2016, 3], *Leucocybe connata* [172/28.09.2016, 1], *Mycena renati* [001/28.05.2016, 2; 304/16.05.2017, 2], *Mycena rosea* [113/01.09.2016, 3; 448/16.09.2017, 32], *Paxillus rubicundulus* [001/19.06.2016, 59], *Pholiota mutabilis* [003/22.06.2016, 14; 388/27.08.2017, 102; 351/01.06.2017, 2; 403/30.07.2017, 68; 347/29.05.2017, 12; 009/22.06.2016, 68; 103/07.08.2016, 12], *Pleurotus pulmonarius* [001/08.07.2016, 1; 004/22.06.2016, 3; 010/25.06.2016, 2; 368/01.07.2017, 22], *Pluteus cervinus* [005/12.07.2016, 30], *Pluteus salicinus* [002/22.06.2016, 3; 417/10.08.2017, 51], *Tricholoma sejunctum* [114/01.09.2016, 2], *Tricholomopsis rutilans* [121/18.08.2016, 14]
- Gyrophaena pulchella** HEER, 1839 – *Armillaria lutea* [122/03.09.2016, 28], *Clitocybe nebularis* [216/29.10.2016, 1; 217/29.10.2016, 2; 193/15.10.2016, 9; 115/02.09.2016, 67], *Clitocybe odora* [111/27.08.2016, 75], *Coprinellus disseminatus* [308/16.05.2017, 1], *Gerronema strombodes*

- [118/02.09.2016, 132; 123/02.09.2016, 42], *Lactarius scrobiculatus* [129/04.09.2016, 1], *Mycena rosea* [113/01.09.2016, 92; 448/16.09.2017, 463], *Pholiota mutabilis* [103/07.08.2016, 1], *Sarcodon imbricatus* [134/04.09.2016, 2], *Tricholoma aurantium* [130/04.09.2016, 14], *Tricholoma equestre* var. *populinum* [138/04.09.2016, 1], *Tricholoma fulvum* [205/20.10.2016, 48; 142/14.09.2016, 86], *Tricholoma sejunctum* [114/01.09.2016, 183; 109/27.08.2016, 106], *Tricholomopsis rutilans* [137/04.09.2016, 26]
- Gyrophæna rousi** DVOŘAK, 1966 – *Entoloma clypeatum* [328/21.05.2017, 4], *Gymnopus confluens* [101/07.08.2016, 7], *Pluteus salicinus* [417/10.08.2017, 1]
- Gyrophæna strictula** ERICHSON, 1839 – *Pluteus salicinus* [417/10.08.2017, 2]
- Gyrophæna williamsi** STRAND, 1935 – *Pholiota mutabilis* [388/27.08.2017, 14], *Tricholomopsis rutilans* [121/18.08.2016, 108], *Tricholoma sejunctum* [136/04.09.2016, 11]
- Leptusa fumida** (ERICHSON, 1839) – *Flammulina velutipes* [248/26.11.2016, 1], *Peziza micropus* [314/16.05.2017, 1]
- Lordithon bimaculatus** (SCHRANK, 1798) – *Amanita muscaria* [127/03.09.2016, 2], *Amanita rubescens* [375/19.07.2017, 4], *Boletus luridiformis* var. *luridiformis* [006/13.07.2016, 1; 143/14.09.2016, 1], *Chlorophyllum rhacodes*, [02/07.08.2016, 1; 378/20.07.2017, 5], *Clitocybe nebularis* [217/29.10.2016, 1; 176/02.10.2016, 1; 360a/24.06.2017, 1], *Hygrophorus pudorinus* [213/25.10.2016, 2], *Lactarius piperatus* [412/07.08.2017, 1], *Lactarius scrobiculatus* [199/19.10.2016, 6], *Megacollybia platyphylla* [163/18.09.2016, 6], *Morchella esculenta* [330/21.05.2017, 5], *Mycena rosea* [448/16.09.2017, 2], *Porphyrellus porphyrosporus* [091/06.08.2016, 1], *Rhodocollybia maculata* [179/02.10.2016, 2], *Russula olivacea* [407/03.08.2017, 3], *Tricholoma fulvum* [205/20.10.2016, 2], *Tricholoma orirubens* [131/04.09.2016, 2], *Volvopluteus gloiocephalus* [343/29.05.2017, 14]
- Lordithon exoletus** (ERICHSON, 1839) – *Amanita muscaria* [127/03.09.2016, 1], *Amanita rubescens* [005/13.07.2016, 11; 009/12.07.2016, 2], *Boletus reticulatus* [003/13.07.2016, 1], *Clitocybe nebularis* [193/15.10.2016, 1; 176/02.10.2016, 2; 360b/24.06.2017, 1], *Coprinellus disseminatus* [308/16.05.2017, 5], *Hydnum repandum* [200/19.10.2016, 2], *Lactarius piperatus* [147/14.09.2016, 1], *Lactarius salmonicolor* [196/19.10.2016, 1; 203/20.10.2016, 1], *Lactarius scrobiculatus* [124/03.09.2016, 1], *Mycena rosea* [113/01.09.2016, 1], *Mycena zephrus* [212/25.10.2016, 1], *Rhodocollybia maculata* [179/02.10.2016, 1], *Russula olivacea* [379/20.07.2017, 1; 407/03.08.2017, 3]
- Lordithon lunulatus** (LINNAEUS, 1760) – *Amanita muscaria* [132/04.09.2016, 3], *Amanita rubescens* [005/13.07.2016, 1; 375/19.07.2017, 1; 009/12.07.2016, 3], *Boletus luridiformis* var. *luridiformis* [143/14.09.2016, 1], *Boletus reticulatus* [002/13.07.2016, 1; 003/13.07.2016, 1], *Chlorophyllum rhacodes* [378/20.07.2017, 8], *Clitocybe nebularis* [360a/24.06.2017, 6; 360b/24.06.2017, 13], *Coprinellus disseminatus* [308/16.05.2017, 1], *Echinoderma asperum* [170/28.09.2016, 1], *Entoloma clypeatum* [328/21.05.2017, 3], *Hydnum repandum* [200/19.10.2016, 1], *Hypholoma fasciculare* [146/14.09.2016, 6; 135/04.09.2016, 2], *Lactarius piperatus* [147/14.09.2016, 1; 202/19.10.2016, 2; 412/07.08.2017, 1; 415/08.08.2017, 2], *Lactarius scrobiculatus* [129/04.09.2016, 3], *Lentinellus ursinus* [195/15.10.2016, 6], *Lepista nuda* [211/25.10.2016, 1], *Megacollybia platyphylla* [007/25.06.2016, 1], *Morchella esculenta* [330/21.05.2017, 14], *Mycena rosea* [113/01.09.2016, 2], *Peziza vesiculosa* [344/29.05.2017, 4; 318/17.05.2017, 1], *Pholiota squarrosa* [164/20.09.2016, 3], 187/07.10.2016, 3], *Pleurotus pulmonarius* [007/13.07.2016, 9], *Porphyrellus porphyrosporus* [091/06.08.2016, 1], *Russula olivacea* [407/03.08.2017, 6; 411/07.08.2017, 2], *Suillellus luridus* [419/14.08.2017, 1; 001/12.07.2016, 3], *Tricholoma equestre* var. *populinum* [138/04.09.2016, 1], *Volvopluteus gloiocephalus* [343/29.05.2017, 4]
- Lordithon thoricus** (FABRICIUS, 1777) – *Amanita muscaria* [132/04.09.2016, 10; 127/03.09.2016, 4], *Amanita rubescens* [092/06.08.2016, 1], *Chlorophyllum rhacodes*, [102/07.08.2016, 4; 378/20.07.2017, 5], *Clitocybe nebularis* [176/02.10.2016, 11], *Clitopilus prunulus* [427/17.08.2017, 1], *Entoloma clypeatum* [328/21.05.2017, 9], *Hygrophorus agathosmus* [174/02.10.2016, 1], *Hypholoma fasciculare* [135a/04.09.2016, 1], *Lactarius piperatus* [002/29.07.2016, 1; 201/19.10.2016, 1; 415/08.08.2017, 2], *Lactarius scrobiculatus* [124/03.09.2016, 1; 129/04.09.2016, 2; 199/19.10.2016, 3], *Leucocybe connata* [172/28.09.2016, 1], *Megacollybia platyphylla* [007/25.06.2016, 4; 096/06.08.2016, 4; 163/18.09.2016, 57; 117/02.09.2016, 1], *Morchella esculenta* [327/21.05.2017, 10; 330/21.05.2017, 12], *Mycena renati* [304/16.05.2017, 2], *Peziza vesiculosa* [318/17.05.2017, 1; 321/21.05.2017, 1], *Porphyrellus porphyrosporus* [091/06.08.2016, 4], *Rhodocollybia maculata* [179/02.10.2016, 1], *Suillellus luridus* [097/06.08.2016, 1; 001/12.07.2016, 1], *Volvopluteus gloiocephalus* [343/29.05.2017, 30], *Xerocomus pascuus* [125/03.09.2016, 2]
- Lordithon trimaculatus** (FABRICIUS, 1793) – *Amanita rubescens* [003/30.07.2016, 1], *Coprinellus disseminatus* [308/16.05.2017, 6], *Echinoderma asperum* [140/13.09.2016, 2], *Lactarius scrobiculatus* [129/04.09.2016, 1], *Lentinellus ursinus* [195/15.10.2016, 2], *Pholiota squarrosa* [187/07.10.2016, 1], *Volvopluteus gloiocephalus* [343/29.05.2017, 5]
- Lordithon trinotatus** (ERICHSON, 1839) – *Amanita muscaria* [132/04.09.2016, 33], *Armillaria lutea* [122/03.09.2016, 3], *Chlorophyllum rhacodes*, [175/02.10.2016, 1], *Hypholoma fasciculare* [146/14.09.2016, 2], *Pholiota squarrosoides* [218/29.10.2016, 1], *Rhodocollybia maculata* [179/02.10.2016, 2], *Tricholoma equestre* var. *populinum* [138/04.09.2016, 7], *Tricholoma fulvum* [142/14.09.2016, 1]
- Megarthritis depressus** (PAYKULL, 1789) – *Clitocybe nebularis* [216/29.10.2016, 5; 360a/24.06.2017, 3], *Lactarius piperatus* [416/08.08.2017, 2], *Peziza vesiculosa* [344/29.05.2017, 1], *Pleurotus pulmonarius* [007/13.07.2016, 5]
- Megarthritis hemipterus** (ILLIGER, 1794) – *Amanita rubescens* [375/19.07.2017, 1], *Lactarius piperatus* [412/07.08.2017, 3; 415/08.08.2017, 6; 416/08.08.2017, 10], *Lactarius scrobiculatus* [124/03.09.2016, 1], *Russula nigricans* [420/14.08.2017, 3], *Russula olivacea* [411/07.08.2017, 7]
- Megarthritis nitidulus** KRAATZ, 1857 – *Lactarius piperatus* [415/08.08.2017, 2]
- Micropeplus porcatus** (PAYKULL, 1789) – *Peziza vesiculosa* [344/29.05.2017, 1]
- Omalius rivulare** (PAYKULL, 1789) – *Entoloma clypeatum* [328/21.05.2017, 1], *Flammulina velutipes* [248/26.11.2016, 11], *Lactarius piperatus* [202/19.10.2016, 1], *Lactarius scrobiculatus* [199/19.10.2016, 1], *Lepista nuda* [243/23.11.2016, 1], *Peziza vesiculosa* [344/29.05.2017, 2], *Phallus impudicus* [186/07.10.2016, 5], *Pleurotus pulmonarius* [361/24.06.2017, 1]

- Omalius septentrionis* THOMSON, 1857 – *Peziza vesiculosa* [321/21.05.2017, 1], *Phallus impudicus* [154/18.09.2016, 1; 186/07.10.2016, 14]
- Omalius validum* KRAATZ, 1857 – *Phallus impudicus* [186/07.10.2016, 2]
- Ontholestes haroldi* (EPPELSHEIM, 1884) – *Peziza vesiculosa* [318/17.05.2017, 1; 321/21.05.2017, 1]
- Ontholestes tessellatus* (GEOFFROY, 1785) – *Boletus reticulatus* [400/30.07.2017, 1], *Lactarius piperatus* [412/07.08.2017, 2]
- Othius subuliformis* STEPHENS, 1833 – *Lycoperdon perlatum* [446/12.09.2017, 1]
- Oxypoda alternans* (GRAVENHORST, 1802) – *Amanita muscaria* [127/03.09.2016, 8], *Boletus edulis* [438/07.09.2017, 5], *Butyriboletus subappendiculatus* [450/16.09.2017, 3], *Clitocybe nebularis* [217/29.10.2016, 6; 193/15.10.2016, 2; 115/02.09.2016, 2; 238/21.11.2016, 1], *Hygrophorus pudorinus* [461/16.10.2017, 6], *Hypholoma fasciculare* [135/04.09.2016, 5], *Lactarius piperatus* [147/14.09.2016, 5; 201/19.10.2016, 8], *Lactarius pterosporus* [003/25.06.2016, 1], *Lactarius scrobiculatus* [129/04.09.2016, 2], *Lentinellus ursinus* [195/15.10.2016, 1], *Lepista nuda* [211/25.10.2016, 2], *Mycena rosea* [448/16.09.2017, 3], *Pholiota squarrosa* [187/07.10.2016, 10], *Pholiota squarrosoides* [218/29.10.2016, 4], *Russula foetens* [090/06.08.2016, 2], *Sarcodon imbricatus* [134/04.09.2016, 16], *Tricholoma fulvum* [205/20.10.2016, 1], *Tricholoma orirubens* [131/04.09.2016, 1], *Tricholoma sejunctum* [136/04.09.2016, 1], *Xerocomus pascuus* [001/22.06.2016, 34; 125/03.09.2016, 2]
- Oxypoda annularis* MANNERHEIM, 1830) – *Gymnopus confluens* [099/06.08.2016, 1]
- Oxypoda arborea* ZERCHE, 1994 – *Megacollybia platyphylla* [163/18.09.2016, 1], *Suillellus luridus* [001/12.07.2016, 1], *Tricholoma aurantium* [130/04.09.2016, 1]
- Oxypoda flavicornis* Kraatz, 1856 – *Flammulina velutipes* [248/26.11.2016, 4], *Lepista nuda* [243/23.11.2016, 1]
- Oxypoda formosa* (KRAATZ, 1856) – *Amanita muscaria* [132/04.09.2016, 4; 198/19.10.2016, 1], *Armillaria lutea* [122/03.09.2016, 20], *Boletus luridiformis* var. *luridiformis* [143/14.09.2016, 1], *Clitocybe nebularis* [360a/24.06.2017, 56; 360b/24.06.2017, 127; 176/02.10.2016, 1], *Echinoderma asperum* [140/13.09.2016, 2], *Gerronema strombodes* [118/02.09.2016, 3; 123/03.09.2016, 3], *Hydnum repandum* [145/14.09.2016, 6], *Hygrophorus agathosmus* [174/02.10.2016, 4], *Hypholoma fasciculare* [146/14.09.2016, 1], *Hypholoma sublateritium* [128/03.09.2016, 1], *Lactarius piperatus* [147/14.09.2016, 1; 201/19.10.2016, 4], *Lactarius scrobiculatus* [129/04.09.2016, 72], *Lepista nuda* [243/23.11.2016, 1], *Macrolepiota procera* [126/03.09.2016, 1], *Megacollybia platyphylla* [163/18.09.2016, 3; 007/25.06.2016, 2], *Mycena renati* [001/28.05.2016, 1], *Paxillus rubicundulus* [001/19.06.2016, 32], *Pholiota mutabilis* [003/22.06.2016, 1; 363/24.06.2017, 8; 009/22.06.2016, 5], *Pholiota squarrosa* [187/07.10.2016, 1; 151/12.09.2016, 2; 164/20.09.2016, 1], *Pleurotus pulmonarius* [001/08.07.2016, 1; 003/18.06.2016, 11; 004/22.06.2016, 16; 361/24.06.2017, 9], *Pluteus salicinus* [002/22.06.2016, 2], *Tricholoma aurantium* [130/04.09.2016, 4], *Tricholoma equestre* var. *populinum* [138/04.09.2016, 31], *Tricholoma saponaceum* [141/14.09.2016, 2], *Xerocomus pascuus* [001/22.06.2016, 1]
- Oxypoda haemorrhoea* (MANNERHEIM, 1830) – *Lepista nuda* [243/23.11.2016, 1]
- Oxyporus maxillosus* FABRICIUS, 1793 – *Armillaria lutea* [122/03.09.2016, 1], *Crepidotus mollis* [311/16.05.2017, 1], *Pholiota mutabilis* [351/01.06.2017, 3; 403/30.07.2017, 2; 333/26.05.2017, 4; 363/24.06.2017, 1; 009/22.06.2016, 1; 003/22.06.2016, 5], *Volvopluteus gloiocephalus* [343/29.05.2017, 7]
- Oxyporus rufus* (LINNAEUS, 1758) – *Suillellus luridus* [001/13.07.2016, 1]
- Philonthus addendus* SHARP, 1867 – *Russula delica* [413/08.08.2017, 1]
- Philonthus marginatus* (MÜLLER, 1764) – *Lactarius piperatus* [412/07.08.2017, 1]
- Proteinus atomarius* ERICHSON, 1840 – *Phallus impudicus* [154/18.09.2016, 1]
- Proteinus brachypterus* (FABRICIUS, 1792) – *Clitocybe nebularis* [193/15.10.2016, 16], *Echinoderma asperum* [170/28.09.2016, 3; 140/13.09.2016, 1], *Flammulina velutipes* [248/26.11.2016, 5], *Hydnum repandum* [200/19.10.2016, 3], *Hygrophorus pudorinus* [213/25.10.2016, 3; 461/16.10.2017, 3], *Hypholoma fasciculare* [146/14.09.2016, 1], *Lacrymaria lacrymabunda* [455/29.09.2017, 1], *Lactarius piperatus* [201/19.10.2016, 1; 202/19.10.2016, 3; 204/20.10.2016, 1], *Lactarius scrobiculatus* [124/03.09.2016, 3; 199/19.10.2016, 1; 129/04.09.2016, 5], *Lentinellus ursinus* [195/15.10.2016, 2], *Mycena rosea* [448/16.09.2017, 2], *Phallus impudicus* [154/18.09.2016, 2; 186/07.10.2016, 10], *Pholiota squarrosoides* [218/29.10.2016, 1], *Russula nigricans* [420/14.08.2017, 2], *Tapinella atrotomentosa* [133/04.09.2016, 2], *Tricholoma fulvum* [205/20.10.2016, 1], *Tricholoma saponaceum* [141/14.09.2016, 2]
- Proteinus cruentulus* PANDELLÉ, 1867 – *Clitocybe nebularis* [216/29.10.2016, 17], *Echinoderma asperum* [170/28.09.2016, 10], *Hydnum repandum* [224/30.10.2016, 8; 145/14.09.2016, 7], *Hygrophorus agathosmus* [174/02.10.2016, 8], *Hygrophorus pudorinus* [461/16.10.2017, 5], *Hypholoma fasciculare* [135a/04.09.2016, 4], *Lactarius piperatus* [416/08.08.2017, 2; 202/19.10.2016, 10], *Lactarius scrobiculatus* [124/03.09.2016, 17; 129/04.09.2016, 32], *Phallus impudicus* [154/18.09.2016, 8; 186/07.10.2016, 39], *Pholiota squarrosa* [187/07.10.2016, 2], *Sarcodon imbricatus* [134/04.09.2016, 2], *Tricholoma aurantium* [130/04.09.2016, 3], *Tricholoma orirubens* [131/04.09.2016, 1]
- Proteinus laevigatus* HOCHHUTH, 1872 – *Lactarius scrobiculatus* [124/03.09.2016, 3], *Russula nigricans* [420/14.08.2017, 1], *Russula olivacea* [411/07.08.2017, 3]
- Proteinus ovalis* STEPHENS, 1834 – *Hygrophorus pudorinus* [461/16.10.2017, 2], *Phallus impudicus* [154/18.09.2016, 2; 186/07.10.2016, 2]
- Quedius cruentus* (OLIVIER, 1795) – *Clitocybe nebularis* [360b/24.06.2017, 1]
- Quedius mesomelinus mesomelinus* (MARSHAM, 1802) – *Armillaria borealis* [465/25.10.2017, 1], *Hericiium flagellum* [283/01.05.2017, 1], *Pleurotus pulmonarius* [004/22.06.2016, 1]
- Quedius xanthopus* (ERICHSON, 1839) – *Asterostroma cervicolor* [207/20.10.2016, 1], *Mycena zephrus* [212/25.10.2016, 3]
- Rugilus rufipes* GERMAR, 1836 – *Peziza vesiculosa* [318/17.05.2017, 1]
- Scaphisoma agaricinum* (LINNAEUS, 1758) – *Crepidotus mollis* [311/16.05.2017, 2], *Hyphodontia spathulata* [003/12.07.2016, 1]
- Scaphisoma boreale* LUNDBLAD, 1959 – *Artomyces pyxidatus* [312/16.05.2017, 1]
- Sepedophilus marshami* (STEPHENS, 1832) – *Hyphodontia spathulata* [003/12.07.2016, 2]
- Tachinus corticinus* GRAVENHORST, 1802 – *Bovistella utrififormis* [255/25.03.2017, 1]

Tachinus laticollis GRAVENHORST, 1802 – *Lactarius piperatus* [412/07.08.2017, 1; 416/08.08.2017, 5]

Tachinus marginatus (FABRICIUS, 1793) – *Gyromitra infula* [223/29.10.2016, 1]

Tachinus pallipes (GRAVENHORST, 1806) – *Lactarius piperatus* [412/07.08.2017, 1; 415/08.08.2017, 4; 416/08.08.2017, 10], *Russula olivacea* [407/03.08.2017, 7]

2. Leiodidae

Agathidium bescidicum REITTER, 1885 – *Hyphodontia spathulata* [003/12.07.2016, 2]

Agathidium nigripenne (FABRICIUS, 1792) – *Hericium flagellum* [283/01.05.2017, 2], *Peziza micropus* [314/16.05.2017, 2]

Agathidium pisanum BRISOUT, 1872 – [*Pleurotus pulmonarius* [001/08.07.2016, 1; 368/01.07.2017, 1]

Apocatops nigrita (ERICHSON, 1837) – *Ramaria flava* [471/11.07.2018, 1], *Lactarius scrobiculatus* [124/03.09.2016, 1], *Lactarius piperatus* [202/19.10.2016, 1], *Morchella esculenta* [330/21.05.2017, 1]

Colenis immunda (STURM, 1807) – *Peziza vesiculosa* [318/17.05.2017, 1]

Nargus anisotomoides (SPENCE, 1813) – *Mycena rosea* [448/16.09.2017, 1]

Sciodreporides fumatus (SPENCE, 1813) – *Phallus impudicus* [154/18.09.2016, 1]

Sciodreporides watsoni (SPENCE, 1813) – *Russula olivacea* [407/03.08.2017, 1], *Coprinellus disseminatus* [308/16.05.2017, 1]

3. Nitidulidae

Cychramus luteus (FABRICIUS, 1784) – *Armillaria lutea* [122/03.09.2016, 5], *Tricholoma equestre* var. *populinum* [138/04.09.2016, 9]

Cychramus variegatus (HERBST, 1792) – *Armillaria lutea* [122/03.09.2016, 10], *Tricholoma equestre* var. *populinum* [138/04.09.2016, 2]

Cyllodes ater (HERBST, 1792) – *Pholiota mutabilis* [347/29.05.2017, 1], *Pleurotus pulmonarius* [004/22.06.2016, 1]

Omosita depressa (LINNAEUS, 1758) – *Peziza vesiculosa* [318/17.05.2017, 1], *Phallus impudicus* [154/18.09.2016, 1]

Pocadius adustus REITTER, 1888 – *Amanita rubescens* [009/12.07.2016, 1], *Chlorophyllum rhacodes* [378/20.07.2017, 3], *Lycoperdon mammiforme* [472/23.07.2018, 12], *Lycoperdon nigrescens* [443/11.09.2017, 5], *Lycoperdon perlatum* [444/11.09.2017, 11; 446/12.09.2017, 2], *Lycoperdon pyriforme* [284/01.05.2017, 3; 288/03.05.2017, 1], *Russula olivacea* [379/20.07.2017, 1]

Pocadius ferrugineus (FABRICIUS, 1775) – *Clitocybe nebularis* [360a/24.06.2017, 1; 360b/24.06.2017, 2], *Lycoperdon mammiforme* [472/23.07.2018, 2], *Lycoperdon pyriforme* [387/27.07.2017, 1; 284/01.05.2017, 4; 337/26.05.2017, 4; 288/03.05.2017, 2; 405/31.07.2017, 4]

4. Mycetophagidae

Litargus connexus (FOURCROY, 1785) – *Pleurotus pulmonarius* [116/02.09.2016, 3]

Mycetophagus ater (REITTER, 1879) – *Pleurotus pulmonarius* [010/25.06.2016, 1]

Mycetophagus multipunctatus FABRICIUS, 1792 – *Pleurotus pulmonarius* [010/25.06.2016, 1]

Mycetophagus quadripustulatus (LINNAEUS, 1760) – *Pleurotus pulmonarius* [004/22.06.2016, 1]

Triphyllus bicolor (FABRICIUS, 1792) – *Pluteus salicinus* [384/27.07.2017, 2]

5. Cerylonidae

Cerylon fagi BRISOUT, 1867 – *Pleurotus pulmonarius* [368/01.07.2017, 1]

Cerylon ferrugineum STEPHENS, 1830 – *Hericium flagellum* [283/01.05.2017, 3], *Peziza micropus* [314/16.05.2017, 1], *Pleurotus pulmonarius* [003/18.06.2016, 1; 010/25.06.2016, 1]

6. Erotylidae

Triplax aenea (SCHALLER, 1783) – *Pleurotus pulmonarius* [004/22.06.2016, 8; 361/24.06.2017, 1]

Triplax rufipes (FABRICIUS, 1781) – *Pleurotus pulmonarius* [003/18.06.2016, 1]

Triplax russica (LINNAEUS, 1758) – *Coprinellus disseminatus* [308/16.05.2017, 1]

7. Carabidae

Notiophilus aquaticus (LINNAEUS, 1758) – *Peziza vesiculosa* [321/21.05.2017, 1]

Pterostichus burmeisteri HEER, 1838 – *Russula chloroides* [214a/25.10.2016, 1]

8. Chrysomelidae

Hermaeophaga mercurialis (FABRICIUS, 1792) – *Peziza vesiculosa* [318/17.05.2017, 1]

Timarcha metallica (LAICHTING, 1781) – *Peniophora incarnata* [250/06.03.2017, 1]

9. Ciidae

Cis fusciclavis NYHOLM, 1953 – *Stereum rugosum* [280/01.05.2017, 1]

Ennearthron cornutum (GYLLENHAL, 1827) – *Hymenochaete tabacina* [228/11.11.2016, 2]

10. Silphidae

Nicrophorus vespilloides HERBST, 1783 – *Lactarius piperatus* [416/08.08.2017, 1]

Oiceoptoma thoracicum (LINNAEUS, 1758) – *Phallus impudicus* [004/12.07.2016, 1]

11. Tetratomidae

Tetratoma ancora FABRICIUS, 1790 – *Craterellus cornucopioides* [435/30.08.2017, 1], *Tremella mesenterica* [334/26.05.2017, 2]

Tetratoma fungorum FABRICIUS, 1790 – *Flammulina velutipes* [248/26.11.2016, 6]

12. Corylophidae

Sericoderus lateralis (GYLLENHAL, 1827) – *Chlorophyllum rhacodes* [378/20.07.2017, 1], *Clitocybe nebularis* [360b/24.06.2017, 1]

13. Cryptophagidae

Pteryngium crenatum (FABRICIUS, 1798) – *Megacollybia platyphylla* [001/31.07.2016, 1]

14. Curculionidae

Rhyncolus elongatus (GYLLENHAL, 1827) – *Hericium flagellum* [283/01.05.2017, 1]

15. Dasytidae

Aplocnemus nigricornis (FABRICIUS, 1792) – *Lepista nuda* [211/25.10.2016, 1]

16. Geotrupidae

Anoplotrupes stercorosus (SCRIBA, 1791) – *Armillaria borealis* [465/25.10.2017, 1], *Chlorophyllum rhacodes* [378/20.07.2017, 1], *Lactarius piperatus* [416/08.08.2017, 1]

17. Hydrophilidae

Megasternum concinnum (MARSHAM, 1802) – *Peziza vesiculosa*
[318/17.05.2017, 6; 321/21.05.2017, 2]

18. Latridiidae

Cartodere nodifer (WESTWOOD, 1839) – *Pleurotus pulmonarius*
[007/13.07.2016, 4]

19. Monotomidae

Rhizophagus dispar (PAYKULL, 1800) – *Mycena viridimarginata*
[373/18.07.2017, 1], *Pholiota limonella* [462/16.10.2017,
6], *Pleurotus abieticola* [156/18.09.2016, 1], *Pleurotus*
pulmonarius [361/24.06.2017, 2, 368/01.07.2017, 1]

20. Ptiliidae

Nossidium pilosellum (MARSHAM, 1802) – *Coprinellus*
disseminatus [308/16.05.2017, 2]

21. Sphindidae

Aspidiphorus orbiculatus (GYLLENHAL, 1808) – *Pleurotus*
pulmonarius [004/22.06.2016, 1]

22. Throscidae

Aulonothroscus brevicollis (BONVOULOIR, 1859) – *Megacollybia*
platyphylla [005/07.07.2016, 1]

Wpłynęło: 31 maja 2022
Zaakceptowano: 18 lipca 2022