AN ANNOTATED AND ILLUSTRATED CATALOGUE OF POLYPORES (AGARICOMYCETES) OF THE BIAŁOWIEŻA FOREST (NE POLAND)

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Abstract. The Bialowieża Forest (BF) is one of the best-preserved lowland deciduous and mixed forest complexes in Europe, rich in diverse fungi. This paper summarizes what is known about the poroid fungi of the Polish part of the Bialowieża Forest, based on literature data, a re-examination of herbarium materials, and the authors’ studies from 1990–2014. An annotated catalogue of polypores recorded in the forest is presented, including 80 genera with 210 species. All literature and herbarium records are enumerated, and 160 species are illustrated with color pictures. Fourteen species previously reported in the literature have uncertain status because they lack voucher specimens and were not confirmed in recent field studies. Antrodiella subradula (Pilát) Niemelä & Miettinen, previously known from Asia, is reported for the first time from Europe. Fourteen species are newly reported from the Bialowieża Forest (mainly from Bialowieża National Park), including 8 species with first records in Poland (Antrodia hyalina Spirin, Miettinen & Kotir., Antrodia infirma Renvall & Niemelä, Antrodiella subradula, Junguhnnia fimbriatella (Peck) Ryvarden, Postia foliculocystidiatea (Kotl. & Vampola) Niemelä & Vampola, Postia minusculoides (Pilát ex Pilát) Boulet, Skeletocutis chrysella Niemelä, Skeletocutis papyracea A. David), and 6 species reported previously from other localities in Poland [Antrodiella faginea Vampola & Pouzar, Dichomitus campestris (Quél.) Domański & Orlick, Loweomyces fractipes (Berk. & M. A. Curtis) Jülich, Oxyporus latemarginatus (Durieu & Mont.) Donk, Perenniporia narymica (Pilát) Pouzar, Phellinus nigricans (Fr.) P. Karst.]. Several very rare European polypores already reported from the Bialowieża Forest in the 20th century, such as Antrodia albobrunnea (Romell) Ryvarden, Antrodiella foliaceodentata (Nikol.) Gilb. & Ryvarden, Buglossoporus pulvinus (Pers.) Donk, Dichomitus albidofuscus (Domański) Domański and Gelatoporia subvermispora (Pilát) Niemelä, were found at new localities, confirming their continuous occurrence in this forest.

Key words: Basidiomycota, Biosphere Reserve, fungal diversity, Poland, poroid fungi, primeval forests, UNESCO World Heritage Site

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INTRODUCTION

The Bialowieża Forest (BF) is one of the best-preserved lowland deciduous and mixed forest complexes in Europe (Faliński 1986; Peterken 1996; Jędrzejewska & Jędrzejewski 1998). It is reported as an example of a European non-fragmented virgin forest community (e.g., Parviainen 2005) or as a remnant of culturally modified ancient forest (e.g., Bobiec 2012). The whole forest complex covers an area of 1250 km² and is located at the border between Poland and Belarus. The Polish part lies between 52°39’–52°48’N and 23°34’–23°38’E and covers an area of 646 km², including 105 km² protected since 1921 as the Bialowieża National Park (BNP) and ca 120 km² protected as a forest reserve (Faliński 2002; Okołów 2012). Bialowieża National Park was declared a Biosphere Reserve in 1977 and in 1979 was designated a UNESCO World Heritage Site (Okołów 2002, 2009). Since 2005 the Biosphere Reserve has been expanded to cover the whole Polish part of the Bialowieża Forest (Okołów 2012). Glaciofluvial sands, gravels and clays built the flat, undulating plain on which the forest is situated at 135–190 m a.s.l. (Kwiatkowski 1994). The local climate has both continental and...
Atlantic features (Faliński 1986). During the last 50 years the mean annual temperature was 6.9°C (January mean –3°C, July mean 18.3°C), snow cover lasted 92 days on average, and mean annual precipitation was 627 mm (Malzahn et al. 2009). The Białowieża Forest consists of a mosaic of various forest communities determined by the variation of topography, soil and hydrology. Coniferous and mixed coniferous stands dominated by Pinus sylvestris L. and Picea abies (L.) H. Karst. cover ca 50% of the forest area in the Polish part of the Białowieża Forest. Wet deciduous forest with Alnus glutinosa Gaertn. and Fraxinus excelsior L. covers ca 20%, rich mesic deciduous stands with Quercus robur L., Carpinus betulus L., Tilia cordata Mill. and Acer platanoides L. cover 15%, and early successional stands with Betula pendula Roth and Populus tremula L. cover 13% of the forest area (Jędrzejewska & Jędrzejewski 1998). The Białowieża Forest differs from Western European forests in the absence of Fagus sylvatica L. The abundance of Quercus robur differentiates it from Eastern European forests. Picea abies occurs in almost every forest community (Pawlaczyk 2009).

The first published data on the polypores of the Białowieża Forest date to the 19th century (Błoński et al. 1888). Over the last 127 years about 100 publications have included information on these fungi, implying that the diversity of the polypores of that area is relatively well known, but poroid species new to science are still being described from the Białowieża Forest (Niemelä et al. 2012; Miettinen et al. 2012). Our knowledge of polypore diversity has not been deliberately summarized for a long time, although some information was included in publications from Stanisław Domański (e.g., Domański 1965, 1967, 1972b; Domański et al. 1967, 1973). Up to 2013 these publications were the primary source of knowledge on polypore diversity in the Białowieża Forest. Some records of a number of rare poroid species given by Stanisław Domański have not been confirmed by any subsequent researchers. Recently some new records of selected poroid species (but mostly common ones) were published based on material collected for fungal exhibits organized yearly in September by Białowieża National Park (e.g., Szczepkowski et al. 2010, 2011; Gierczyk et al. 2013, 2014). Niemelä (2013) published a manual for identification of polypores of the Białowieża Forest, including descriptions and a list of species found by his team during inventory work in 2008–2012. This manual gives information on 177 poroid species reported from the study area – 142 species found during the inventory and 35 species from reports in the literature. The literature data are given without revision of the herbarium materials, which in some cases results in duplication of unverified and sometimes wrong information mainly from Domański (records based on misidentified specimens; some of them corrected here).

This work summarizes what is known about the poroid fungi of the Polish part of the Białowieża Forest in the form of an annotated and illustrated catalogue. It is based on literature data, a re-examination of some herbarium materials, especially for species whose concept has changed, and our studies from 1990–2014.

**Material and methods**

The original as-yet unpublished material was collected in different areas of the Białowieża Forest by the first author in 2005–2014 during a few short collecting trips in 2005–2008, 2011, 2013 and 2014, and extensive inventory work in 2009–2010 for the ‘Conservation plan for species of macrofungi in the Białowieża National Park’ (Karasiński et al. 2010). In total, more than 1100 specimens of polypores were collected and studied. The material is preserved mainly in the personal reference collection of the first author (abbreviated D.K.), with duplicates in KRAM F. The second author has collected polypores in the Białowieża Forest since 1990. The collection includes ca 350 specimens stored in the Herbarium of Marek Wołkowycki (abbreviated H.M.W. M). Other specimens examined (ca 150) were obtained from KRA and mostly from KRAM F-SD (collection of Stanisław Domański in KRAM F, containing mainly polypores collected in the Białowieża Forest in 1955–1970).

For micromorphological studies, thin freehand sections were cut with a razor blade from fresh or dry basidiomata under a Nikon SMZ-2T microscope, mounted in water, 3% aqueous potassium hydroxide with 1% aqueous phloxine, and Melzer’s reagent or 0.1% cotton blue in 60% lactic acid (Kirk et al. 2008), and examined under a Nikon Eclipse E-400 microscope at magnification up to 1250×. Color photographs were
Fig. 1. Study area: pale grey – Białowieża Forest, dark grey – Białowieża National Park, black circles – visited localities. Numbers on map refer to forest section numbers. From Karasiński et al. 2009 (supplemented and modified).
taken by the first author using a Nikon D200 camera and an AF Micro Nikkor 60 mm 1:2.8 D lens. MycoBank (www.mycobank.org) and Index Fungorum (www.indexfungorum.asp) websites were consulted for nomenclature and abbreviations of authors of the fungal names.

In the catalogue the species appear alphabetically. All specimens are cited for most species. For some frequently collected species only selected representative specimens examined are cited in full, and for the remaining specimens only the forest section numbers and associated specimen/herbarium numbers are given. For all specimens cited in full the data are arranged as follows: number of forest section of the Polish part of Białowieża Forest in bold (often with precision to section quarter), substrate, date of collection, collector name, specimen number, and herbarium abbreviation. The arrangement of the forest sections in the Białowieża Forest, and the visited collecting sites, are shown in Figure 1. For localities outside the borders of the Białowieża National Park, information about the precise site is usually given in parentheses after the forest section numbers. For some herbarium specimens deposited in the collection of Stanisław Domański, some original annotations, especially original determinations from the labels, are cited after the KRAM F-SD numbers. The literature reports of each species are given as reference lists arranged chronologically. Doubious reports are excluded from the main list and included in the section ‘Records with uncertain status’, with appropriate commentary.

As a rule, the collecting sites of the specimens collected by Domański in the Białowieża Forest are marked as collected in ‘Białowieża’. Likewise, for almost all his literature records, precise site locations besides ‘Białowieża’ are not available. For such specimens cited here, only ‘Białowieża Forest’ is given as the locality instead of forest section numbers.

RESULTS AND DISCUSSION

LIST OF SPECIES

Abbreviations used in the list: *Alnus* – *Alnus glutinosa*; *Betula* – *Betula pendula*; BF – Białowieża Forest; BNP – Białowieża National Park; *Carpinus* – *Carpinus betulus*; *Fraxinus* – *Fraxinus excelsior*; *Picea* – *Picea abies*; *Pinus* – *Pinus sylvestris*; *Populus* – *Populus tremula*; *Quercus* – *Quercus robur*

*Abortiporus biennis* (Bull. ex Fr.) Singer  

**Fig. 2A**


REMARKS. The specimen reported by Jaroszewicz (1996) was presented during the Second Fungi Exposition of the Białowieża Forest. Unfortunately, herbarium material was not preserved, but the occurrence of the species in the BF was recently confirmed by Niemelä (2013).

*Albatrellus ovinus* (Schaeff.) Murrill  

**Fig. 2B**


*Amylocystis lapponica* (Romell) Bondartsev & Singer ex Singer  

**Fig. 2C**

SPECIMENS EXAMINED: 260D, on *Picea* fallen trunk, 12 Oct. 2009, Karasiński 4633a (D.K.); 257D (D.K. 4347); 284 (D.K. 6342); 285A, on *Picea* fallen trunk, 29 July 2009, Karasiński 3617c (D.K.); 287A (D.K. 4368); 288D (D.K. 3738, 3743D); 289C (D.K. 3745); 314B (D.K. 3888A); 315A (D.K. 3896B); 315B (D.K. 3911); 319C (D.K. 3733A); 319C (D.K. 3579C); 319C (D.K. 3748A); 319C (D.K. 3766A); 340C (D.K. 4225C); 340F (D.K. 4243A); 340G (D.K. 4316); 343B (D.K. 3841E); 344A (D.K. 3836A); 345B (D.K. 3718C); 345B (D.K. 3716C); 346A (D.K. 3728B, 4679D); 370B (D.K. 4756); 370C (D.K. 3703); 372B (D.K. 3984B); 374A (D.K. 4162); 374B (D.K. 4170A); 374C (D.K. 3409); 374D (D.K. 3176A); 375A (D.K. 3577); 375B (D.K. 4279A); 399A (D.K. 5063C); 399B (D.K. 5072A).

Remarks. All specimens reported here were collected from logs, trunks and snags of Picea. Amylocystis lapponica is rather common in BNP, especially in the former Orłówka Strictly Protected Area, and very rare in other parts of the BF. In Poland it has never been found outside the BF (Piątek 2005a). The specimen cited by Wojewoda (2003 after Domański 2001) from the Lasy Łochowskie forest (central Poland) represents Postia fragilis (Fr.) Júlich (A. Szczepkowski, pers. comm.).

Amyloporia crassa (P. Karst.) Bondartsev & Singer ex Bondartsev


Remarks. Domański (1965) described Amyloporia crassa f. subimbricata using specimens collected in the BF. Some specimens of this taxon (but not all) preserved in Domański’s herbarium (e.g., KRAM F-SD 333, 792, 2658, 2859, 2862, 2863, 2864) represent A. sitchensis (D. V. Baxter) Vampilpa & Pouzar. See also remarks under Amyloporia sitchensis.

Amyloporia sitchensis (Fr.) Rajchenb., Gorjón & Pildain

Specimens examined: 130, on Picea fallen trunk, 14 Sept. 2009, Karasiński 4113 (D.K.); 135C, on Picea fallen log, 8 July 2009, Karasiński 3342c (D.K.); 214B (D.K. 11007); 224, on Picea fallen trunk, 19 Aug. 2009, Karasiński 3947 (D.K.); 225D (D.K. 4598); 260D, on Picea trunk, 12 Oct. 2009, Karasiński 4633B (D.K.); 261A (D.K. 3380); 282 (D.K. 3522); 285 (D.K. 5299E); 288D (D.K. 3737B); 314B (D.K. 3303); 316 (D.K. 5273-1); 319C (D.K. 3754E); 341 (D.K. 4771); 344A (D.K. 3837); 346 (D.K. 4688); 368 (D.K. 4084); 369 (D.K. 3487); 386 (D.K. 4084); 399, on Picea fallen trunk, 2 Nov. 2009, Karasiński 5062 (D.K.); 400 (D.K. 3258); 402B (H.M.W. M-3646); 439A (Głęboki Kąt Reserve), on Picea fallen trunk, 22 May 2006, Karasiński 060522-3410 (D.K.); 485C (H.M.W. M-1307); 699C (H.M.W. M-3600).

Literature reports: Pilát 1950 (as Poria sinuosa), Domański 1965 (as Coriolellus vaporarius f. vaporarius and C. vaporarius f. bulbosus), Domański 1967 (as Coriolellus sinuusus), Kotłaba & Łazebniček 1967 (as Coriolellus sinuosus), Anonymous 1968 (as Coriolellus vaporarius), Domański 1972b (as Coriolellus sinuosus), Szczepkowski et al. 2008 (as Antrodia sinuosa), Niemelä 2013 (as Antrodia sinuosa), Gierczyk et al. 2014 (as Antrodia sinuosa).

Remarks. This species is very common in the study area.

Amyloporia sitchensis (D. V. Baxter) Vampilpa & Pouzar


**Literature reports:** Domański 1965 (as Amylopora crassa f. subimbricata), Domański 1972b (as Amylopora crassa f. subimbricata), Vampola & Pouzar 1992, Szczepkowski et al. 2008 (as Antrodia sitchensis), Szczepkowski et al. 2010 (as Antrodia sitchensis), Gierczyk et al. 2013 (as Antrodia sitchensis), Niemelä 2013 (as Antrodia sitchensis), Gierczyk et al. 2014 (as Antrodia sitchensis).

**Remarks.** In the BF it grows almost exclusively on Picea, but was once collected from Pinus and once from Populus. In Poland *Amylopora sitchensis* is very rare and occurs in natural forests of the northeastern part of the country. So far, outside the BF it was only recorded in the Starożyn Reserve in the Puszcza Augustowska forest (Vampola & Pouzar 1992). The most beautiful perennal basidiomata with an undulate hymenial surface form on the bark in root axils on root-necks of Picea stumps and dead standing trees. In the field it can be differentiated from similar *A. crassa* by its sweet resinous odor, which is less pronounced but preserved also in herbarium specimens. Micromorphologically, the size and shape of basidiospores (ca 4.5–5.5 × 1.8–2.2 μm, cylindrical) differentiate *A. sitchensis* from *A. crassa* (basidiospores 5–7 × 2.5–3.5 μm, ellipsoidal). Moreover, the skeletal hyphae of *A. sitchensis* do not dissolve in 5% potassium hydroxyde solution, while those of *A. crassa* dissolve rapidly in this medium. *Amylopora sitchensis* sporulates in summer; samples collected in spring and autumn are often sterile. Vampola and Pouzar (1992) suggested that this fungus may be an undescribed European taxon morphologically very similar to the species described from North America and known as Antrodia (*Amylopora*) sitchensis.

**Amylopora xantha** (Fr.) Bondartsev & Singer ex Bondartsev


**Remarks.** This species is very common in the study area.

**Anomoporia bombycina** (Fr.) Pouzar


**Literature reports:** Domański 1965 (as Fibuloporia bombycina), Domański 1967 (as Fibuloporia bombycina), Kotlaba & Lazebniček 1967, Anonymous 1968 (as Fibuloporia bombycina), Domański 1972b, Niemelä 2013.

**Remarks.** *Anomoporia bombycina* is associated with fallen logs and trunks of conifers (Picea, Pinus), usually in the late stage of wood decomposition. The species is very rare in Poland, known only from the BF. Only three specimens are deposited in Domański’s herbarium (KRAM F-SD 719 and 740 as Poria bombycina, KRAM F-SD 741 as Fibuloporia bombycina) collected in...
1955–1958. Possibly the historical Polish record from the vicinity of Elbląg published by Kaufmann (1925) is based on misidentification, because the specimen was collected from *Populus* sp. Revision of that report is not possible due to lack of herbarium material, but it is likely that Kaufmann’s specimen represents *Ceriporiopsis aneirina* (Sommerf.) Domański.

**Antrodia albobrunnea** (Romell) Ryvarden


**Literature reports:** Domański 1965 (as Tyromyces albo-brunneus), Domański 1967 (as Tyromyces albobrunneus) Domański 1972b (as *Tyromyces albobrunneus*), Domański 1967 (as *Tyromyces albobrunneus*), Piątek 2005b, Niemelä 2013.

**Remarks.** The single previous specimen of *Antrodia albobrunnea* collected in the BF is preserved in Domański’s herbarium (KRAM F-SD 3733) and all literature reports referred to this specimen. Herbarium envelope KRAM F-SD 3733 contains a very small basidiome, ca 3 × 1 cm. Microstructures are well preserved and developed in this specimen, except for brown pigmented hyphae, which finally formed a brown marginal zone and a low subicular layer close to the substrate. They are present in small numbers in Domański’s specimen, so the brown marginal zone is almost absent, hardly visible to the naked eye and also under a lens. The specimens collected in 2009–2012 and reported here are larger and better developed (especially *Karasiński 6356* is a large basidiome). In Poland *A. albobrunnea* seems to be a true rarity, known only from the BNP (Piątek 2005b), and also here it is very rare.

**Antrodia hyalina** Spirin, Miettinen & Kotir.  


**Literature reports:** None. The species is new for Poland.

**Remarks.** This recently described species (Spirin et al. 2013a) is similar to *Antrodia pulvinascens* (Pilát) Niemelä. Both species grow on *Populus* wood but *A. hyalina* differs by having annual basidiomata (perennial in *A. pulvinascens*), cylindrical basidiospores (ellipsoidal in *A. pulvinascens*) and solid skeletal hyphae (hyphae have a clearly visible lumen in *A. pulvinascens*).

**Antrodia infirma** Renvall & Niemelä


**Literature reports:** None. The species is new for Poland.

**Remarks.** *Antrodia infirma* was described from the boreal zone at the timberline in Lapland (Renvall & Niemelä 1992). This species is characterized by having resupinate basidiomata with relatively large pores, a dimitic hyphal system with very rare tramal skeletals, and cylindrical basidiospores, 6.2–7.8 × 2.2–3 µm in the specimens studied. The characters of the Polish specimens very well fit the original diagnosis (Renvall & Niemelä 1992) and the Swedish collection (Renvall 1993), except for basidiomata size. According to the
Scandinavian authors cited above and Ryvarden and Melo (2014), in the boreal zone this species forms small basidiomata up to 10 cm long, while the Polish specimens are medium-sized, large or very large, up to 50 cm long or even more when confluent. Antrodia infirma inhabits fallen trunks of conifers. About 92% of the Finish collections are from Pinus (Renvall 1993); it was found only twice on Picea, in Finland and in Sweden. All the Polish samples are from large decorticate Pinus trunks in various stages of decomposition, from early stage shortly after decorticating to a fairly advanced stage of decay. In the latter case the basidiome was developed on heartwood of a big decayed pine log. The basidiomata of the species are short-lived and rapidly destroyed by insects. Old basidiomata look somewhat like white forms of Rhodonia placenta (Fr.) Niemelä, K.-H. Larss. & Schigel. Gelatoporia subvermispora (Pilát) Niemelä forms slightly similar basidiomata.

Antrodia infirma is a rare European taxon known from boreal primeval forests. The Polish records from the BNP are at the southern distribution limit of the species. Antrodia infirma is known from Finland, Sweden, Russia (Renvall & Niemelä 1992; Renvall 1993; Ryvarden & Melo 2014) and northeastern Poland (this paper).

**Antrodia macra** (Sommerf.) Niemelä

**Specimen examined.** BF, on Salix sp. branch, 23 Sept. 1965, Domański (KRAM F-SD 4884, labelled as ‘Coriolellus heteromorphus (Fr.) Bond. form. albidaus [Coriolellus serpens (Fr.) Bond.]’).

**Literature reports:** Niemelä 2013.

**Remarks.** The species appears to be very rare in the study area. It differs from A. serpens (Fr.) P. Karst. by having smaller pores and shorter basidiospores, and its association with Salix spp. Ryvarden and Gilbertson (1993) reported this species from Poland without a precise locality.

**Antrodia malicola** (Berk. & M. A. Curtis) Donk

**Specimen examined.** 399C, on *Populus* dead standing trunk, 2 Nov. 2009, Karasinski 5046B (D.K.).

**Literature reports:** Skirgiello 1998, Piątek 2002a.

Remarks. It appears to be very rare in the study area and also in Poland, where it is known from less than 10 localities in the southeastern part of the country (Wojewoda 2003; Piątek 2002a).

**Antrodia pulvinascens** (Pilát) Niemelä

**Specimens examined:** 260D, on *Populus* large fallen branch, 12 Oct. 2009, Karasinski 4629 (D.K.); 399B, on rotten *Populus* log, 1 Nov. 2009, Karasinski 5041 (D.K.); BNP, Sierchanowski Tryb, *Populus tremula*, very big fallen trunk in moist mixed forest, 14 Sept. 2009, Niemelä 8650 & Schigel (KRA).

**Literature reports:** Niemelä 2013.

**Remarks.** In Poland Antrodia pulvinascens is known so far only from the Tatra Mts (Niemelä 1978b as *A. plicata*) and the BF (Niemelä 2013). This species has perennial basidiomata and macro-morphologically is very similar to Amylopora sitchensis, but differs in the shape and size of the basidiospores, and the lack of the specific odor characterizing the latter. Antrodia hyalinina, which also grows on *Populus* wood, differs in having annual basidiomata with a soft consistency and narrower, cylindrical basidiospores (ellipsoidial and significantly wider in *A. pulvinascens*).

**Antrodia serialis** (Fr.) Donk

**Specimens examined:** 272 (Lipiny Reserve), on *Picea* fallen trunk, 21 May 2006, Karasinski 060521-5267 (D.K.); 319C, on *Picea* fallen trunk, 13 Aug. 2009, Karasinski 3764 (D.K.); 369A, on *Picea* fallen trunk, 14 July 2009, Karasinski 3488A (D.K.); 370C, on *Picea* fallen trunk, 10 Aug. 2009, Karasinski 3702 (D.K.); 374, on *Picea* trunk, 23 Apr. 2009, Karasinski 2875 (D.K.); 375D (D.K. 10953); 412B (H.M.W. M-1835); 413A (H.M.W. M-1895); 414A (H.M.W. M-1948); 414B (H.M.W. M-1941); 415C (H.M.W. M-1475); 439A (H.M.W. M-1257); 439C (H.M.W. M-1296); 462A (H.M.W. M-1332); 485C (H.M.W. M-1312); 486B (H.M.W. M-1875); 572 (Michnowka Reserve), on *Picea* fallen log, 24 May 2006, Karasinski 060524-5513 (D.K.).

**Literature reports:** Blonski et al. 1888 (as *Polyporus callosus*), Pilat 1950 (as *Trametes serialis*), Orloś 1955b (as *Trametes serialis*), Orloś 1960 (as *Trametes serialis*), Orloś 1961 (as *Trametes serialis*), Domański 1965 (as *Coriolellus serialis* and *C. serialis f. callosus*), Domański et al. 1967 (as *Coriolellus serialis*), Domański...

Remarks. It is one of the commonest poroid species in the study area, growing on trunks and stumps of conifers, especially Picea. It forms annual to biennial, often large, resupinate or effused-reflexed basidiomata with a leathery consistency, white pores, and elongate and narrow pilei with an ochraceous to brown upper surface. The resupinate basidiomata of Antrodia serialis are slightly similar to A. albobrunnea, but the latter has a softer consistency, never forms pilei and produces allantoid basidiospores (subfusciform in A. serialis).

Antrodia serpens (Fr.) P. Karst.

Specimens examined: BF, on Corylus avellana dead trunk, 24 Oct. 1959, Domański (KRAM F-SD 487, labelled ’[Trametes albida (Fr.) B. et G.] Coriolellus heteromorphus (Fr.) Bond. form. albidus’).

Literature reports: Domański 1965 (as Coriellus albidus), Domański 1967 (as Coriellus albidus), Domański 1972b (as Coriellus albidus), Niemelä 2013 (as Antrodia heteromorpha).

Remarks. The specimen examined is the same as listed in the literature reports as Coriellus albidus. During contemporary fieldwork the occurrence of this species was not confirmed. It may be very rare or, less likely, its population is locally extinct. In Poland this species is quite common in deciduous and mixed forests (especially in beech forests on fallen branches of Fagus sylvatica) in the south of the country. Recently the species was epitypified based on material from Poland (Spirin et al. 2013b).

Antrodiella citrinella Niemelä & Ryvarden


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Remarks. This species is uncommon in the BF. Resupinate or rarely effused-reflexed basidiomata with a vivid yellow hymenial surface, small, subglobose basidiospores, and connection with Fomitopsis pinicola are diagnostic characters of Antrodiella citrinella.

Antrodiella faginea Vampilova & Pouzar

Specimens examined: 130, on Alnus fallen trunk with Mensularia radiata, 14 Sept. 2009, Karasiński 4126 (D.K.); 134A, on Alnus fallen log decayed by Mensularia radiata, 12 July 2009, Karasiński 3446 (D.K.); 368, on Quercus fallen branch with Hymenochaete rubiginosa, 13 Sept. 2009, Karasiński 4083 (D.K.); 374C, on Carpinus fallen branch, 11 July 2009, Karasiński 3421 (D.K.); 374C, on Betula fallen branch, 26 July 2009, Karasiński 3537 (D.K.); BF, on Populus, 14 Sept. 1967, Domański (KRAM F-SD 5303 as Tyromyces semisupinus); BF, on Carpinus, 9 Aug. 1965, Domański (KRAM F-SD 4529 as Tyromyces semisupinus).

Literature reports: None. The species is new for the BF.

Remarks. The species is somewhat similar to Antrodiella pallescens (Pilát) Niemelä & Miettinen, which differs by having narrower and slightly curved basidiospores (ellipsoidal to ovoid in A. faginea) and occurrence on or close to Fomes fomentarius (L.) J. J. Kickx; the predecessors of A. faginea are species of hymenochaetoid fungi such as Phellinus spp. and Inonotus spp., more rarely Hymenochaete spp. Moreover, A. faginea often
produces gloeocystidia, which are not observed in *A. pallescens*. The species was reported earlier from Poland by Piątek (2001) based on a specimen collected in the Western Carpathians. This specimen in fact represents *Antrodiella pallescens* (KRAM F-51169). Recently the species was recorded in Kampinos National Park (Karasiński et al. 2015).

*Antrodiella foliaceodentata* (Nikol.) Gilb. & Ryvarden


**Remarks.** *Antrodiella foliaceodentata* was described from the Caucasus (Nikolajeva 1949) and so far has been found only in the type locality and the BNP. It was not previously reported, but the species seems to be the successor of *Fomes fomentarius*. For almost all specimens cited above (except those collected by Wojewoda) this association was very conspicuous, and often basidiomata of *A. foliaceodentata* grew directly on dead basidiomata of *Fomes fomentarius*.

*Antrodiella leucoxantha* (Bres.) Miettinen & Niemelä

**Specimens examined:** 369B, on *Carpinus* fallen branch, 22 Sept. 2009, Karasiński 4373 (D.K.); BNP, Masiewski Tryb, north of Dziedzinka house, on *Carpinus* thin fallen trunk, 15 Oct. 2008, Niemelä 8499 (KRA).

**Literature report:** Niemelä 2013.

**Remarks.** This species is characterized by having small, white, effused-reflexed or pileate basidiomata with thin pilei, cylindrical to slightly curved basidiospores, and the absence of a clear connection with fungal predecessors. It is close to *Antrodiella pallescens*, but the latter is a successor of *Fomes fomentarius* and has smaller basidiospores. The similar *A. faginea* has ellipsoidal basidiospores, grows on wood decayed by hyme-nochaetoid species like *Phellinus* spp. or *Inonotus* spp., and often produces gloeocystidia.

*Antrodiella pallescens* (Pilát) Niemelä & Miettinen

**Specimen examined.** 318D, on *Betula pendula* fallen trunk and *Fomes fomentarius* dead basidiome, 17 Aug. 2009, Karasiński 3880 (D.K.); BF, on *Betula* branch, 4 Sept. 1966, Dománsky (KRAM F-SD 5086 as *Tyromyces semisupinus*); BF, on hardwood trunk, 10 Aug. 1962, Dománsky (KRAM F-SD 2219 as *Trametes genistae* ined.); BF, on *Carpinus* branch, 4 Aug. 1962, Dománsky (KRAM F-SD 2498 as *Tyromyces semisupinus*).

**Literature reports:** Dománsky 1965 (as *Tyromyces semisupinus*), Dománsky 1967 (as *Tyromyces semisupinus*), Dománsky 1972b (as *Tyromyces semisupinus*), Niemelä 2013, Gierczyk et al. 2014.

**Remarks.** Among numerous specimens preserved in KRAM F-SD under the name *Tyromyces semisupinus*, 11 specimens were collected by
Domański in the BF. These were revised and five different species were identified among them: *Antrodiella citrinella, A. faginea, A. pallescens, A. romellii* (Donk) Niemelä and *Junghuhnia luteola*ba (P. Karst.) Ryvarden (for specimen details see under these species).

*Antrodiella romellii* (Donk) Niemelä

**Specimen examined.** 418 (W. Szafer Landscape Reserve), on bark of *Quercus?* fallen twig, 29 Sept. 2006, Karasiński 060929/6308 (KRAM F-47250); BF, on *Corlylus* trunk, 5 Aug. 1962, Domański (KRAM F-SD 2495 as Tyromyces semisupinus); BF, on hardwood branch, 6 Aug. 1962, Domański (KRAM F-SD 2496 as Tyromyces semisupinus); BF, on *Carpinus* trunk, 27 Aug. 1956, Domański (KRAM F-SD 379 as Tyromyces semisupinus); BF, on *Betula*, 11 Aug. 1962, Domański (KRAM F-SD 2497 as Tyromyces semisupinus).

**Literature reports:** Domański 1965 (as Tyromyces byssinus), Domański 1967 (as Tyromyces byssinus), Domański 1972b (as *Poria romellii*), Piątek 2001, Karasiński et al. 2009, Niemelä 2013.

*Antrodiella serpula* (P. Karst) Spirin & Niemelä


**Literature reports:** Domański et al. 1967 (as *Trametes hoehnelii*), Domański 1969 (as *Trametes hoehnelii*), Domański 1970b (as *Coriolus hoehnelii*), Anonymous 1968 (as *Trametes hoehnelii*), Domański et al. 1973 (as *Trametes hoehnelii*), Bujakiewicz et al. 1992 (as *Antrodiella hoehnelii*), Skirgiello 1997 (as *Antrodiella hoehnelii*), Bujakiewicz & Kuwata 2010 (as *Antrodiella hoehnelii*), Niemelä 2013, Gierczyk et al. 2014 (as *Antrodiella hoehnelii*).

*Antrodiella subradula* (Pilát) Niemelä & Miettinen

**Specimen examined:** 342C, on well rotted wood of *Acer?* or *Ulmus?* fallen trunk (coexists with Gloeohypochnium analogum), 17 Oct. 2009, Karasiński 4781 (D.K.).

**Literature report:** None. The species is new for Poland.

**Remarks.** This is the first European find of the species, and probably the second record worldwide. The original specimen was collected on *Salix* in Siberia (Ziling 233 in PRM, not studied), lectotypified by Donk (1974; see Miettinen et al. 2006 for details). The species is characterized by having resupinate basidiomata with a very thin white subiculum and short cream-colored tubes, angular pores 3–5 per mm, dimitic hyphal structure with skeletal hyphae 2.5–4.5 µm wide, and clamped generative hyphae 2.0–3.5 µm wide, short clavate basidia 11–14.5 × 4–5 µm with 4 sterigmata, and ellipsoid, thin-walled, non-amyloid basidiospores, 3–4 × 2.0–2.5 µm, often with a few small oil drops inside. *Antrodiella romellii* has basidiospores similar in shape but larger (3.5–5.0 × 2.5–3.2 µm), and smaller pores (5–7 per mm). Macroscopically the species is also somewhat similar to *Schizopora radula* (Pers.) Hallenb.

*Aporpium canescens* (P. Karst.) Bondartsev & Singer ex Singer


**Literature reports:** Błoński et al. 1888 (as *P. subspadiceus*), Domański 1965 (as *Aporpium caryae*), Domański 1967 (as *Aporpium caryae*), Domański 1972b (as *Aporpium caryae*), Wojewoda 1977 (as *Aporpium caryae*), Wojewoda 1979 (as *Aporpium caryae*), Niemelä 2013, Gierczyk et al. 2014 (as *Proteromelius caryae*).

*Aporpium macroporum* Niemelä, Spirin & Miettinen

**Remarks.** The species differs from *A. cane-scens* by having larger pores and wider basidiospores. For more details see Miettinen *et al.* (2012).

**Aurantiporus croceus** (Pers.) Murrill  Fig. 4G


**Literature reports:** Piątek & Wołkowycki 2005 (as *Hapalopilus croceus*), Gierczyk *et al.* 2013 (as *Hapalopilus croceus*), Niemelä 2013.

**Aurantiporus fissilis** (Berk. & M. A. Curtis) H. Jahn ex Ryvarden  Fig. 4H


**Literature reports:** Niemelä 2013.

**Remarks.** The similar *Spongipellis spumeus* (Sowerby) Pat. usually grows solitary and has larger basidiospores.

**Aurantiporus priscus** Niemelä, Miettinen & Manninen  Fig. 5A


**Literature reports:** Niemelä *et al.* 2012, Niemelä 2013.

**Remarks.** *Aurantiporus priscus* was recently described based on material from Poland, Finland and Sweden. The type specimen was collected in BNP (Niemelä *et al.* 2012). This species was previously reported from Europe under the name *Hapalopilus salmonicolor* (Berk. & M. A. Curtis) Pouzar or *Erastia salmonicolor* (Berk. & M. A. Curtis) Niemelä & Kinnunen (e.g., Niemelä 2005), but an isotype study of *Polyporus salmonicolor* Berk. & M. A. Curtis described from the U.S.A. revealed that the European materials belong to a different species described as *Aurantiporus priscus* (Niemelä *et al.* 2012). *Hapalopilus salmonicolor* is a North American taxon having short cylindrical basidiospores 2.0–2.5 µm wide. Another similar species, *Hapalopilus ochraceoelateritus* (Bondartzev) Bondartzev & Singer, has narrower basidiospores 1.8–2.2 µm wide. In contrast to these two species, *Aurantiporus priscus* has broadly ellipsoidal basidiospores, 4.5 × 2.5–3.5 µm in the specimen examined. *Hapalopilus salmonicolor* reported by Domański (1972b) from two Polish sites outside the Białowieża Forest (Międzyrzecz Podlaski and Pojezierze Mazurskie lakeland) in fact represents *Hapalopilus aurantiacus* (Rostk.) Bondartzev & Singer with basidiospores 5.0–7.0 × 2.5–3.0 µm. *Aurantiporus priscus* seems to be a very rare relict species of old-growth and primeval forests, associated with wood of conifers.

**Bjerkandera adusta** (Willd.) P. Karst.

**Specimens examined:** 98B (D.K. 10986); 344D, on *Populus* fallen trunk, 28 March 2002, *Wołkowycki* (H.M.W. M-2799); 385C (Sacharewo), on *Betula pendula* fallen trunk, 8 Oct. 1998, *Wołkowycki* (H.M.W. M-1231); 402A (D.K. 10939); 412D, on *Carpinus*, 5 Nov. 1998, *Wołkowycki* (H.M.W. M-1353); 413A (H.M.W. M-1212); 437B (H.M.W. M-1884); 487B (H.M.W. M-0984); BF, on deciduous wood, 1 May 1959, *Wojewoda s.n.* (KRAM F-13473); BF, on hardwood, 1 May 1959, *Domański* (KRAM F-SD 2648); BF, on *Betula* fallen branch, Oct. 1955, *Domański* (KRAM F-SD 2651); BF, on *Carpinus*, 28 Apr. 1960, *Domański* (KRAM F-SD 632 as *Gloeoporus adustus f. stratosus* f.n.); BF, on *Carpinus*, 10 June 1966, *Domański* (KRAM F-SD 4991).

**Literature reports:** Błoński *et al.* 1888 (as *Polyergus adusta*), Błoński 1889a (as *Polyergus adusta*), Siemaszko 1923 (as *Polyergus adusta*), Nespiak 1956 (as *Leptoporus adusta v. carpineus*), Orłoś 1960 (as *Gloeoporus adusta*), Orłoś 1961 (as *Gloeoporus...*

**Bjerkandera fumosa** (Pers.) P. Karst.

**Specimens examined:** 413B (Sacharew), on Salix fragilis fallen trunk, 17 Oct. 1997, Wołkowycki (H.M.W. M-1865); BF, Palace Park in Białowieża, on deciduous trunk, 21 Oct. 1955, Domański (KRAM F-SD 323); BF, on Populus trunk, 25 Sept. 1965, Domański (KRAM F-SD 4904); BF, on Salix sp. trunk, 26 Sept. 1965, Domański (KRAM F-SD 4923).

**Literature reports:** Domański 1967, Anonymous 1968, Niemelä 2013.

**Buglossoporus pulvinus** (Pers.) Donk  Fig. 5B


**Literature reports:** Domański et al. 1967 (as Piptoporus quercinus), Domański 1967 (as Piptoporus quercinus), Domański et al. 1973 (as Piptoporus quercinus), Niemelä 2013.

**Remarks.** Basidiomata of this species appear in summer and rarely at the beginning of autumn. In the study area all specimens except one were found on fallen logs, trunks and branches of Quercus in early or middle stages of wood decomposition. Only once it was observed in a necrotic depression ca 1 m above ground level on the trunk of a living old Quercus tree. These observation conflict with literature data in which the species is usually described as a parasite on living trees and most rarely a saprobe on dead wood (e.g., Domański et al. 1973; Ryvarden & Gilbertson 1994; Bernicchia 2005; Ryvarden & Melo 2014).

**Ceriporia aurantiocarneascens** (Henn.) M. Pieri & B. Rivoire

**Literature reports:** Niemelä 2013.

**Remarks.** The species was reported by Niemelä (2013) without a precise locality. We did not find it in the BF.

**Ceriporia excelsa** (S. Lundell) Parmasto  Fig. 5C

**Specimens examined:** 340A, on rotten Quercus log, 22 Sept. 2010, Karasiński 6001 (D.K.).

**Literature reports:** Niemelä 2013.

**Remarks.** This species is characterized by having a pink to reddish orange pore surface and oblong to short cylindrical basidiospores. It is a rare species in the study area and also in Poland (Wojewoda 2003).

**Ceriporia purpurea** (Fr.) Donk  Fig. 5D


**Literature reports:** Domański 1967 (as Meruliopsis purpurea), Niemelä 2013.
Remarks. This species has basidiomata similar to *C. excelsa* but differs in having slightly smaller pores and larger, allantoid basidiospores.

*Ceriporia viridans* (Berk. & Broome) Donk

Fig. 5E

Specimen examined: 398, on *Carpinus* fallen trunk, 21 Sept. 2007, Karasiński 1671 (D.K.); BF, on *Corylus avellana* trunk, 10 Aug. 1962, Domaiński (KRAM F-SD 2310); BF, on wood of *Tilia* sp., 12 June 1966, Domaiński (KRAM F-SD 5015); BF, on wood of *Tilia* sp., 22 Sept. 1965, Domaiński (KRAM F-SD 4865); BF, on dead basidiocarp of *Fomes fomentarius*, 9 Aug. 1962, Domaiński (KRAM F-SD 2542); BF, on wood of *Betula* sp., 23 Oct. 1957, Domaiński (KRAM F-SD 5444).


*Ceriporiopsis aneirina* (Sommerf.) Domaiński

Fig. 5F


*Ceriporiopsis resinascens* (Romell) Domaiński

Fig. 5G

Specimens examined: 402A, on *Populus* trunk, 13 Sept. 2013, Karasiński 10092 (D.K.); BF, on *Alnus* trunk, 27 Oct. 1956, Domaiński (KRAM F-SD 568); BF, on *Salix* sp. branch, 23 Sept. 1965, Domaiński (KRAM F-SD 4883).

Literature reports: Domaiński 1967.

Remarks. This uncommon species is macroscopiclly similar to *C. aneirina* but usually forms smaller basidiomata with smaller pores 3–4 per mm (1–3 per mm in *C. aneirina*), and narrower, cylindrical basidiospores (broadly ellipsoidal in *C. aneirina*).

*Cerrena unicolor* (Bull.) Murrill

Fig. 5H

Specimens examined: 130, on *Betula pendula* fallen trunk, 14 Sept. 2009, Karasiński 4109 (D.K.); 225B, on *Betula* fallen trunk, 11 Oct. 2009, Karasiński 4587 (D.K.); 272D (H.M.W. M-1107); 314A, on *Populus* fallen trunk, 7 July 2009, Karasiński 3300 (D.K.); 375D (D.K. 10973); 384C (H.M.W. M-1132); 413A (H.M.W. M-1217); 488C (H.M.W.M-0963); 500A (H.M.W. M-2258); 516D (H.M.W. M-2132); 668D (H.M.W. M-1113).


*Chaetoporellus latitans* (Bourdot & Galzin) Bondartsev & Singer ex Singer

Specimens examined: BF, on wood of *Picea* fallen trunk, 20 Sept. 1960, Domaiński (KRAM F-SD 845).


Remarks. In the BF it seems to be a very rare species, not found during recent fieldwork. The specimen cited above was previously reported by Domaiński (1965, 1967, 1972b). Niemelä (2013) reported it from the BF based on literature data (after Domaiński 1972b).

*Cinereomyces lindbladii* (Berk.) Jülich

Fig. 6A

Specimens examined: 135C (D.K. 3339D); 135D, on *Pinus* fallen trunk, 8 July 2009, Karasiński 3337 (D.K.); 194C (D.K. 3358A); 225B, on *Picea* fallen trunk, 14 Sept. 2009, Karasiński 4142 (D.K.); 260A (D.K. 4643); 261A (D.K. 3375A, DK 3380A); 285A (D.K. 5309; DK 5314); 319C (D.K. 3757); 340C, on *Picea* fallen log, 6 July 2009, Karasiński 3284 (D.K.); 340F (D.K. 4311); 346D (D.K. 4696A); 369B (D.K. 4198); 373C, on *Quercus* fallen trunk, 31 Oct. 2009, Karasiński 4982 (D.K.); 373D (D.K. 4360A2); 374C (D.K. 4158); 399C (D.K. 5028A); 412B (H.M.W. M-1947); 414C (H.M.W. M-2815); 415C (H.M.W. M-1469); 463C (H.M.W. M-1284); 500A (H.M.W. M-1520).

Literature reports: Domaiński 1959a (as *Poria cinerascens*), Domaiński 1965 (as *Tyromyces cinera-
Climacocystis borealis (Fr.) Kotl. & Pouzar


Coltricia cinnamomea (Jacq.) Murrill

**Specimens examined:** 285A, on the ground under Picea, Carpinus and Quercus, 15 Aug. 2009, Karasiński 3802b (D.K.).


**Remarks:** This species is rare in the studied area.

Coltricia perennis (L.) Murrill

**Specimens examined:** 383D, on mineral soil in Serratulo-Pinetum, 20 Aug. 2000, Wołkowycki (H.M.W. M-0983); 384C (H.M.W. M-0982); 385D (H.M.W. M-1369); 417 (W. Szafer Landscape Reserve), on the ground, 29 Sept. 2006, Karasiński 060929-6310 (D.K.); 487B (H.M.W. M-1405); 596A (H.M.W. M-1743); 666A, on mineral soil in Peucedano-Pinetum, 27 Aug. 2000, Wołkowycki (H.M.W.M-1036); 668A (H.M.W. M-1037); 698 (Starzyna Reserve), on sandy soil, 28 Sept. 2006, Karasiński 060928-6112 (D.K.).


**Remarks:** Recent records of this species are only outside the BNP borders.

Coriolopsis gallica (Fr.) Ryvarden

**Specimens examined:** 194C, on Fraxinus fallen trunk, 9 July 2009, Karasiński 3367 (D.K.); 194D (D.K. 3668); 194D (D.K. 3367); 214D (D.K. 11014); 225B (D.K. 3687); 253D (D.K. 4099B); 254D (D.K. 3814F); 314C, on Fraxinus fallen branch, 25 Apr. 2010, Karasiński 5182A (D.K.); 314C, on Fraxinus fallen log, 25 Apr. 2010, Karasiński 5193 (D.K.); 334C, on bark of Fraxinus fallen trunk, 24 March 1993, Wołkowyski (H.M.W. M-2259); 370C (D.K. 4720); 373D (H.M.W. M-0051); 413A (H.M.W. M-3450); 439C (H.M.W. M-1409); 487A (H.M.W. M-2822); 488C (Nieznanowo Reserve), on Fraxinus fallen trunk, 13 Sept. 2005, Karasiński 050913-7611 (D.K.); 572 (Michnówka Reserve), on Fraxinus fallen trunk, 24 May 2006, Karasiński 060524-5627 (D.K.).

**Literature reports:** Orłoś 1960 (as Trametes gallica), Domański et al. 1967 (as Funalia extenuata and F. extenuata f. resupinato-reflexa), Domański 1968 (as Trametella extenuata), Domański et al. 1973 (as Trametella extenuata), Bujakiewicz et al. 1992 (as Coriolopsis extenuata), Bujakiewicz 1994 (as Coriolopsis extenuata), Skirgiel 1997 (as Coriolopsis extenuata), Bujakiewicz 2002, 2003, Szczepkowski et al. 2008, Bujakiewicz & Kujawa 2010, Niemelä 2013 (as Trametella gallica), Gierczyk et al. 2014.

Coriolopsis trogii (Berk.) Domański

**Specimens examined:** 214D (Szczekotowo Reserve), on Populus big fallen log, 17 Oct. 2014,

**Literature reports:** Szczepkowski et al. 2008, Niemelä 2013 (as *Trametella trogii*), Gierczyk et al. 2014.

**Remarks.** This species probably is uncommon in the study area or else is undercollected.

*Daedaleopsis confragosa* (Bolton) J. Schrötl.  
*Fig. 6G*

**Specimens examined:** 98B, on *Quercus* stump, 17 Oct. 2014, Karasiński 10990 (D.K.); 413A, on *Quercus* fallen trunk, 5 Oct. 1998, Wolkowski (H.M.W. M-1210); 413B (H.M.W. M-1423); 580 (Podcerkwa), on *Quercus*, 1 Sept. 1973, Wojewoda s.n. (KRAM F-58156); 703A (H.M.W. M-1121); BF, on *Quercus*, 25 Sept. 1965, Domański (KRAM F-SD 4906); BF, on bark of *Quercus* trunk, 30 Aug. 1957, Domański (KRAM F-SD 461 as *Trametes quercina f. lenzioides*).


*Daedalea quercina* (L.) Pers.  
*Fig. 6F*

**Specimens examined:** 98B, on *Quercus* stump, 17 Oct. 2014, Karasiński 10990 (D.K.); 413A, on *Quercus* fallen trunk, 5 Oct. 1998, Wolkowski (H.M.W. M-1210); 413B (H.M.W. M-1423); 580 (Podcerkwa), on *Quercus*, 1 Sept. 1973, Wojewoda s.n. (KRAM F-58156); 703A (H.M.W. M-1121); BF, on *Quercus*, 25 Sept. 1965, Domański (KRAM F-SD 4906); BF, on bark of *Quercus* trunk, 30 Aug. 1957, Domański (KRAM F-SD 461 as *Trametes quercina f. lenzioides*).


*Datronia mollis* (Sommerf.) Donk  
*Fig. 6H*

**Specimens examined:** 98B (D.K. 10988); 214D (D.K. 11020); 369A, on *Populus* fallen branch, 14 July 2009, Karasiński 3480D (D.K.); 370C, on *Acer* fallen branch, 4 July 2009, Karasiński 3228B (D.K.); 372B, on *Populus* log, 18 Aug. 2009, Karasiński 3978 (D.K.); 372D, on *Populus* fallen trunk, 20 Aug. 2009, Karasiński 3978b (D.K.); 412C, on *Populus* stump, 1 Sept. 1965, Domański (KRAM F-SD 4906); 415A (H.M.W. M-3419); 437B (H.M.W. M-1908); 438A (H.M.W. M-1282); 516C (H.M.W. M-2130); 580 (Podcerkwa), on fallen trunk, 1 Sept. 1973, Wojewoda s.n. (KRAM F-58158).


**Remarks.** This species appears to be common in Poland (Wojewoda 2003) but uncommon in the BF.

* Dichomitus albidofuscus* (Domański) Domański  
*Fig. 7A*

**Specimens examined:** BF, on *Picea* fallen trunk, 10 Aug. 1965, Domański 4541 (KRAM F-SD 4541- holotype); 130C, on rotten *Picea* fallen trunk, 14 Sept. 2009, Karasiński 4120 (D.K.); 261A, on bark of *Picea* fallen trunk, 10 July 2009, Karasiński 3378 (D.K.); 284D,

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**Fig. 6.** A – Clonereomyces lindbladii (Berk.) Jülich, B – Climacocystis borealis (Fr.) Kotl. & Pouzar, C – Coltricia cinnamomea (Jacq.) Murill, D – Coriolopsis gallica (Fr.) Ryvarden, E – Coriolopsis trogii (Berk.) Domański, F – Daedalea quercina (L.) Pers., G – Daedaleopsis confragosa(Bolton) J. Schrötl., H – Datronia mollis (Sommerf.) Donk. Photo D. Karasiński (A–H).

**Literature reports:** Domański 1966 (as *Poria albidofusca*), Domański 1967 (as *Poria albidofusca*), Domański 1972b, Niemelä 2013.

**Remarks.** The species has its *locus classicus* in the BF (Domański 1966). Its basidiomata develop on wood at the end of spring or in summer, and occasionally later. The earliest basidiomata in the initial stage of development were observed at the end of April, after a mild and almost snowless winter. Usually the basidiomata mature in June or the beginning of July, and later disappear quickly. When the summer has a long rainless period, some dead, dry remnants of basidiomata can be found also in August and even September, but they are difficult to identify in this condition. The species is known so far from BNP, a few localities in the Czech Republic and the European part of Russia (Vampola & Vlasák 1992; Kotkova & Isaeva 2007). Based on molecular data a new combination into *Donkiporia* Kotl. & Pouzar has recently been proposed for this species (Vlasák *et al.* 2010).

*Dichomitus campestris* (Quél.) Domański & Orlicz

**Specimens examined:** 399A, on dead still-attached branch of *Corylus avellana*, 4 July 2009, Karasiński 3240 (D.K.).

**Literature reports:** None. This species is new for BNP.

**Remarks.** In the study area the species appears to be very rare, so far known from only one specimen, found close to the main gate to the Park. The species is associated with *Corylus avellana* dead standing trunks and dead still-attached branches. In the south of Poland it was recorded also on *Alnus incana*.

*Diplomitoporus crustulinus* (Bres.) Domański

**Specimens examined:** BF, on *Picea* fallen branch, 4 Aug. 1965, Domański (KRAM F-SD 4473).

**Literature reports:** Domański 1970a, Domański 1972b, Niemelä 2013.

**Remarks.** This species is known in the study area from one specimen cited above, and was not confirmed in recent fieldwork. Niemelä (2013) reported it from the BF based on literature data (after Domański 1970a).

*Diplomitoporus flavescens* (Bres.) Domański

**Specimens examined:** 317C, on *Pinus* fallen trunk, 14 Aug. 2009, Karasiński 3786 (D.K.); 725 (Krugle), on *Pinus* dead standing trunk, 31 Oct. 2014, Wołkowycki (H.M.W. M-3263).


**Remarks.** This species probably is not rare in the study area but is undercollected.

*Fibroporia gossypium* (Speng.) Parmasto

**Specimens examined:** 135C, on *Pinus* fallen log, 8 July 2009, Karasiński 3344 (D.K.); 225A (D.K. 4138); 226A, on bark of *Alnus glutinosa* fallen trunk, 9 July 2009, Karasiński 3355A (D.K.); 254D (D.K. 3807); 256B (D.K. 3629); 272 (Lipiny Reserve), on *Picea* fallen trunk, 26 Sept 2006, Karasiński 060926-5853 (D.K.); 285A (D.K. 3801); 288D, on *Picea* rotten trunk, 12 Aug.

**Fig. 7.** A – *Dichomitus albidofusca* (Domański) Domański, B – *Dichomitus campestris* (Quél.) Domański & Orlicz, C – *Diplomitoporus crustulinus* (Bres.) Domański (dried specimen KRAM F-SD 4473), D – *Diplomitoporus flavescens* (Bres.) Domański, E – *Fibroporia gossypium* (Speng.) Parmasto, F – *Fistulina hepatica* (Schaeff.) Fr., G – *Fomitiporia punctata* (Fr.) Murrill, H – *Fomitiporia robusta* (P. Karst.) Fiasson & Niemelä. Photo D. Karasiński (A–H).
2009, Karasiński 3737 (D.K.); 313B (D.K. 3511); 314B (D.K. 3887); 315B (D.K. 3904); 315B (D.K. 3917); 318D (D.K. 3859); 340C (D.K. 4239A); 340F (D.K. 4314); 341C (D.K. 4409); 342C (D.K. 4793); 345A (D.K. 3716A); 345B (D.K. 3718D); 369A (D.K. 3488); 372B, on Picea big log, 20 Aug. 2009, Karasiński 3984b (D.K.); 372B (D.K. 3986B); 373C (D.K. 3458); 374A (D.K. 4171); 375B (D.K. 4654).

**Literature reports:** Domański 1965 (as Tyromyces resupinatus), Domański 1967 (as Tyromyces resupinatus), Domański 1972b (as Fibroporia gossypia), Szczepkowski et al. 2008 (as Antrodia gossypina), Szczepkowski et al. 2010 (as Antrodia gossypina), Niemelä 2013, Gierczyk et al. 2014 (as Antrodia gossypium).

**Remarks.** This species appears to be common in the study area.

**Fistulina hepatica** (Schaeff.) Fr.

**Specimens examined:** 254D, on dead standing Quercus trunk, 15 Aug. 2009, Karasiński 3800C (D.K.); 258C, on trunk of Quercus living tree ca 280 years old, Karasiński 4353 (D.K.); 318D (D.K. 3747); 318D (D.K. 3862); 319C, at base of living Quercus, 11 Aug. 2009, Karasiński 3719 (D.K.); 340C (D.K. 4319B); 374A (D.K. 3731); 402 (D.K. 3965); 402B (D.K. 3827); 414B (H.M.W. M-1658).


**Fomes fomentarius** (L.) J. J. Kickx

**Specimens examined:** 98B, on Populus trunk, 17 Oct. 2014, Karasiński 10983 (D.K.); 214D (D.K. 11001); 287A (D.K. 4377A); 340B (D.K. 4203A); 340F (D.K. 4299A); 344B (D.K. 3714A); 345A, on Fraxinus log, 11 Aug. 2009, Karasiński 3714 (D.K.); 345A (D.K. 3598A); 372D (D.K. 3992A); 385C (H.M.W. M-0973); 399A (D.K. 5040A); 402A (D.K. 10940); 513B (H.M.W. M-1109).


**Remarks.** This is a widely distributed temperate and boreal species, common in the study area.

**Fomitiporia punctata** (Fr.) Murrill

**Specimens examined:** 402A, on bark of Populus fallen trunk, 19 Sept. 2013, Karasiński 9961 (D.K.); 412A (Sacharewo), on Prunus avium fallen branch, 26 March 2002, Wołkowycki (H.M.W. M-2720); 412B (H.M.W. M-1511); 463A (H.M.W. M-1288); **BF**, on Corylus avellana trunk, 18 Sept. 1960, Domański (KRAM F-SD 1101); **BF**, on Populus trunk, 24 Oct. 1955, Domański (KRAM F-SD 514).

**Literature reports:** Domański 1965, 1967, 1972b, Szczepkowski et al. 2008, Niemelä 2013. All literature reports as Phellinus punctatus.

**Fomitiporia robusta** (P. Karst.) Fiasson & Niemelä

**Specimens examined:** 225, on trunk of Quercus old living tree, 20 Sept. 2011, Karasiński 6394 (D.K.); 412B, on trunk of Quercus living tree, 29 Nov. 2000, Wołkowycki (H.M.W. M-0964); 413C (H.M.W. M-1902); 488A (H.M.W. M-2059).


**Remarks.** In the BF it is rather common, associated with old oaks.

**Fomitopsis pinicola** (Sw.) P. Karst.

**Specimens examined:** 123A (D.K. 10991); 135C (D.K. 3343B); 194D (D.K. 3669C); 225 (D.K. 3687C); 226A (D.K. 3549C); 254D (D.K. 3808E); 255B (D.K. 3653C); 256 (D.K. 3644B); 285A, on Betula pendula fallen trunk, 28 Apr. 2010, Karasiński 5312A (D.K.); 313A, on Picea fallen trunk, 25 July 2009, Karasiński 35094 (D.K.); 314 (D.K. 3303D, DK 3289B).
Fomitopsis rosea (Alb. & Schwein.) P. Karst.  


Remarks. This is one of the commonest porous species in the study area, especially in BNP. A single large fallen Picea trunk may often be inhabited by more than 200 basidiomata. Outside the Białowieża Forest it is known in Poland from only a few localities (Wojewoda 2003).

Frantisekia mentschulensis (Pilát) Spirin  


**Literature reports:** Kotlaba & Pouzar 1988 (as *Poria fissiliformis*), Piątek 2001 (as *Antrodiella fissiliformis*), *Karasiński et al.* 2009, Niemelä 2013, Gierczyk et al. 2014 (as *Antrodiella fissiliformis*).

**Remarks.** So far, in Poland this species is not known outside the BF. Ryvarden and Gilbertson (1993) reported it from Poland without a precise locality.

*Fuscoporia ferruginosa* (Schrad.) Murrill

**Specimens examined:** 135D, on fallen trunk of deciduous tree, 8 July 2009, *Karasiński* 3332a (D.K.); 194C, on *Populus* fallen trunk, 9 July 2009, *Karasiński* 3364 (D.K.); 334A (H.M.W. M-0046); 344D, on *Acer* fallen branch, 28 March 2002, Wółkowycki (H.M.W. M-2820); 399B, on *Fraxinus excelsior* fallen trunk, 2 Nov. 2009, *Karasiński* 5066 (D.K.); 414C (H.M.W. M-2725).

**Literature reports:** Pilát 1950 (as *Phellinus ferruginosus*), Niemelä 2013 (as *Phellinus ferruginosus*).

*Ganoderma applanatum* (Pers.) Pat.


**Remarks.** This is common species in the study area but was underrecorded during recent fieldwork.

*Ganoderma lucidum* (Curtis) P. Karst.


**Remarks.** This species is rare in the study area.

*Gelatoporia subvermispora* (Pilát) Niemelä


**Literature reports:** Domański 1967 (as *Poria subvermispora*), Domański 1969d (as *Fibuloporia subvermispora*), Domański 1972b (as *Fibuloporia subvermispora*), Niemelä 1985, Niemelä 2013.
Remarks. This species appears to be not rare in the study area. In Poland it was reported from BNP and recently from Kampinos National Park in central Poland (Karasiński et al. 2015), and also found in the Lipówka Reserve in the Niepolomice Forest in the south of the country (D. Karasiński, unpubl.).

Gloeophyllum abietinum (Bull.) P. Karst.


Remarks. In Poland it is a common species in managed coniferous forests, but rather uncommon in the study area.

Gloeophyllum odoratum (Wulfén) Imazeki


Remarks. This species is common in the study area.

Gloeophyllum sepiarium (Wulfén) P. Karst.

Specimens examined: 182D (D.K. 10995); 335D, on Picea fallen trunk, 24 March 1993, Wolkowyczy (H.M.W. M-1126); 335C (H.M.W. M-1123); 369A, on Picea fallen trunk, 14 July 2009, Karasiński 3488B (D.K.); 384A (H.M.W. M-1487); 412B (H.M.W. M-1488); 413A (H.M.W. M-1142); 415C (H.M.W. M-1471); 464D (H.M.W. M-1127); 488C (H.M.W. M-0972); 537D (H.M.W. M-1111).


Remarks. This species appears to be rare in the study area.

Gloeoporus dichrous (Fr.) Bres.


Remarks. This species appears to be rare in the study area.

Gloeoporus pannocinctus (Romell) J. Erikss.

Specimens examined: 135C, on Betula pendula fallen trunk, 8 July 2009, Karasiński 3342d (D.K.); 214D (D.K. 11004); 224D (D.K. 3932D); 225A (D.K. 4130); 225B (D.K. 4600); 226A (D.K. 3349); 256D (D.K. 3769A); 258C (D.K. 4357); 261A (D.K. 3392); 284B (D.K. 3814D); 313A (D.K. 3507); 315D (D.K. 3928); 319C (D.K. 3748B); 343B (D.K. 3841B); 370C (3707B); 370D (D.K. 4399); 372D, on Populus fallen trunk, 20 Aug. 2009, Karasiński 3967 (D.K.); 372D (D.K. 3975A); 372D (D.K. 3982B); 373C, on Populus fallen branch, 20 Aug. 2009, Karasiński 3975b (D.K.);


**Remarks.** In the BF it is a rather common species on dead hardwoods, especially *Populus* and *Betula*.

**Gloeoporus taxicola** (Pers.) Gilb. & Ryvarden Fig. 9C

**Specimens examined:** **284D**, on *Pinus* decorticat trunk, 7 July 2009, Karasiński 3315 (D.K.); **316C**, on *Pinus* fallen branch, 27 Apr. 2010, Karasiński 5273A (D.K.); **316D**, on bark of *Pinus* fallen trunk, 1 May 2010, Karasiński 5357 (D.K.); **399C** (H.M.W. M-2800); **412B** (H.M.W. M-2705).

**Literature reports:** Domański 1967 (as *Merulioptis taxicola*), Niemelä 2013 (as *Merulioptis taxicola*).

**Remarks.** This species is not rare but undercollected in recent studies.

**Grifola frondosa** (Dicks.) Gray Fig. 9D


**Hapalopilus ochraceolateritus** (Bondartzev) Bondartzev & Singer Fig. 9F

**Specimens examined:** **BF**, on *Pinus* fallen trunk, 17 July 1958, Domański (KRAM F-SD 716); **BF**, on *Pinus* trunk, Oct. 1955, Domański (KRAM F-SD 814); **BF**, on *Picea* fallen trunk, 20 Oct. 1963, Domański (KRAM F-SD 3424).

**Literature reports:** Domański 1965, 1967, 1972b, Niemelä 2013.

**Remarks.** The specimens cited above are preserved in KRAM F-SD and possibly are the same as in literature reports. *Hapalopilus ochraceolateritus* seems to be a true rarity in the study area; since 1963 it has not been recollected, including during recent intensive fieldwork. According to available data, the basidiomata appear from July to October. Morphologically similar *H. aurantiacus* differs by having larger pores (1–3 per mm vs. 3–6 per mm in *H. ochraceolateritus*) and larger (mostly wider) basidiospores (5.2–6.4 × 2.2–2.8 µm vs. 4.2–5.4 × 1.8–2.2 µm in *H. ochraceolateritus*).

**Hapalopilus rutilans** (Pers.) Murrill Fig. 9E

**Specimens examined:** **194C**, on dead standing trunk of *Quercus*, 9 July 2009, Karasiński 3356b (D.K.); **356A** (H.M.W. M-1115); **413A** (H.M.W. M-1128); **414B** (H.M.W. M-1953); **414D** (H.M.W. M-2196); **444B**, on *Corylus avellana*, 22 Aug. 2004, Wolkowycki (H.M.W. M-3431); **463A** (H.M.W. M-1744).

**Literature reports:** Błoński 1889a (as *Ochroporus nidulans*), Domański et al. 1967 (as *Hapalopilus nidulans*), Domański 1967 (as *Hapalopilus nidulans*), Anonymous 1968 (as *Hapalopilus nidulans*), Domański et al. 1973 (as *Hapalopilus nidulans*), Bujakiewicz et al. 1992, Skirgiel 1997, Bujakiewicz & Kujawa 2010 (as *Hapalopilus nidulans*), Niemelä 2013, Gierczyk et al. 2014 (as *Hapalopilus nidulans*).

**Remarks.** This species is not common but possibly also undercollected in recent studies.

**Heterobasidion annosum** (Fr.) Bref.


**Remarks.** Literature reports published before 2000 refer to the species *sensu lato*. In KRAM F-SD all specimens collected by Domański in the
study area belong to *Heterobasidion parviporum* Niemelä & Korhonen (see below). We did not collect *Heterobasidion annosum* s.str. during recent fieldwork. Recent records referring to the species sensu stricto were published by Szczepkowski et al. (2008), Bujakiewicz and Kujawa (2010), Gierczyk et al. (2013, 2014) and Niemelä (2013).

**Heterobasidion parviporum** Niemelä & Korhonen


**Remarks.** We did not confirm this species in recent work and did not find it among the specimens stored in KRAM F-SD, but it was collected and recently published from the study area by Bujakiewicz and Kujawa (2010). Niemelä (2013) reported it based on literature data (after Domański 1972b).

**Inonotus cuticularis** (Bull.) P. Karst. Fig. 10B


**Literature reports:** Domański et al. 1967, 1973, Niemelä 2013.

**Remarks.** This species appears to be rare and was not confirmed by recent observations. Only one specimen (cited above) collected in 1955 is deposited in KRAM F-SD.

**Inonotus dryadeus** (Pers.) Murrill Fig. 10C

**Literature reports:** Karpiński 1949 (as *Polyporus dryadeus*), Orłoś 1955b, Domański et al. 1967, Domański et al. 1973 (as *Inonotus dryadeus*), Bujakiewicz 2003, Bujakiewicz & Kujawa 2010, Niemelä 2013.

**Remarks.** We did not confirm this species in recent work and did not find it among the specimens stored in KRAM F-SD, but it was collected and recently published from the study area by Bujakiewicz (2003) and Bujakiewicz and Kujawa (2010). Niemelä (2013) reported it based on literature reports (after Karpiński 1949, 1967).

**Inonotus hispidus** (Bull.) P. Karst. Fig. 10D

Specimens examined: **413A** (Sacharewo), on trunk of *Malus domestica* living tree, 30 July 2000, Wołkowycki (H.M.W. M-1919).

**Literature reports:** Niemelä 2013.

**Remarks.** *Inonotus hispidus* is characterized by having usually large, sessile, semicircular basidioomata with a strongly hispid upper surface and ovoid basidiospores 9–12 × 6–9 µm, the largest among European species of *Inonotus*. In Poland almost all reports are of it growing synanthropically in places such as orchards, gardens, parks and avenues (Piątek 2000). Similarly, in the BF it was collected only once in an old orchard in the vicinity of Hajnówka (Sacharewo). Niemelä (2013) listed this species as “Rather common in Central Europe”, and apparently did not find it in the BF.

**Inonotus obliquus** (Pers.) Pilat Fig. 10E

Specimens examined: **316**, on *Betula pubescens* fallen trunk, 27 Apr. 2010, Karasiński 5279 (D.K.);

**Literature reports:** Błoński *et al.* 1888 (as Polyergus obliquus), Błoński 1889a (as Ochroporus obliquus), Pilát 1950, Orłoś 1951 (as Fomes nigricans), Maňka & Stube 1952 (as Poria obliqua), Orłoś 1961, Domański 1965, 1967, Anonymous 1968, Domański 1972b.

**Irplex lacteus** (Fr.) Fr.


**Literature reports:** Błoński 1889a (as *Sistotrema canescens*), Domański 1967, Niemelä 2013.

Remarks. This species appears to be rare in the study area.

**Ischnoderma benzoinum** (Wahlenb.) P. Karst.


Remarks. In the study area the species occurs mostly on *Picea* and very rarely on *Pinus*. On the latter substrate the basidiomata are smaller and usually grow solitary.

**Ischnoderma resinosum** (Fr.) P. Karst. Fig. 10H


Remarks. In the BF this species appears to be much rarer than *Ischnoderma benzoinum*.

**Junghuhnia collabens** (Fr.) Ryvarden Fig. 11A


**Literature reports:** Domański 1965, 1967 (as *Chaetoporus rixosus*), Kotlaba & Laześniček 1967 (as *Chaetoporus rixosus*), Anonymous 1968 (as *Chaetoporus rixosus*), Domański 1972b (as *Chaetoporus collabens*), Szczepkowski *et al.* 2008, Niemelä 2013, Gierczyk *et al.* 2014.

**Junghuhnia fimbriatella** (Peck) Ryvarden Fig. 11B

3823 (D.K.); 374A, on Quercus fallen trunk together with Ganoderma applanatum, 19 Sept. 2009, Karasiński 4275 (D.K.).

**Literature reports:** None. The species is new for Poland.

**Remarks.** The species is characterized by having resupinate, cream-colored basidiomata with pores 3–5 per mm, a strongly rhizomorphic margin, large, encrusted skeletoncystidia with subhymenial or tramal origin and small, broadly ellipsoid to subglobose basidiospores 2.5–3.5 × 1.8–2.5 μm (in specimens examined). Junghuhnia fimbriatella seems to be a very rare successor of the common Ganoderma applanatum. This association, mentioned earlier by other authors (e.g., Ryvarden & Gilbertson 1993), was confirmed in all recent records of the species in the BF. Ryvarden and Gilbertson (1993) and Ryvarden and Melo (2014) reported Junghuhnia fimbriatella from Poland based on Große-Brauckmann and Nuss (1991). However, in the latter publication there are no data on the occurrence of this species in Poland. Hence it is reported here as a new national record.

**Junghuhnia lacera** (P. Karst.) Niemelä & Kinnunen

Fig. 11C


**Literature reports:** Domański 1972b (as Chaetoporus separabilimus), Niemelä 2013.

**Remarks.** This species appears to be rare in the study area.

**Junghuhnia luteoalba** (P. Karst.) Ryvarden

Fig. 11D


**Literature reports:** Domański 1965, 1967 (as Chaetoporus variecolor), Domański 1972b (as Chaetoporus luteoalbus), Niemelä 2013.

**Junghuhnia nitida** (Pers.) Ryvarden

Fig. 11E


**Literature reports:** Błoński 1889a (as Polyporus micans), Domański 1965, 1967 (as Chaetoporus eurpus), Domański 1972b (as Chaetoporus nitidus), Niemelä 2013.

**Remarks.** It is close to Junghuhnia lacera but differs in having smaller and more regular pores 5–7 per mm (2–5 per mm in J. lacera), a non-rhizomorphic margin and slightly smaller basidiospores.

**Laetiporus sulphureus** (Bull.) Murrill

Fig. 11F

**Specimens examined:** 214D (Szczekotowo Reserve), on Quercus big fallen log, 17 Oct. 2014, Karasiński 11010 (D.K.); 402C, at base of Quercus dead standing trunk, 22 Sept. 2011, Karasiński 6445A (D.K.); BNP, SE part, west of Dziedzinka house, at base of big Quercus robur, 12 Oct. 2008, Niemelä 8460 (KRA); BF, on Quercus living tree, 12 June 1959, Domański (KRAM F-SD 398 as Grifola sulphurea).

**Literature reports:** Błoński et al. 1888 (as Poly- porus rostafinskiï nov. sp.), Błoński 1889b (as Polyporus Rostafinskiï), Siemasko 1925 (as Polyporus sulphureus), Karpiński 1949 (as Polyporus sulphureus), Orłoś 1951, 1955b (as Polyporus sulphureus), Orłoś 1960, 1961 (as Grifola sulphurea), Domański et al.

Remarks. This species is very common in Poland, but based on field observations is moderately common in the study area, mainly on old Quercus and rarely on Salix.

**Lenzites betulinus** (L.) Fr.  
Fig. 11G

**Specimens examined:** 370C, on *Tilia* fallen trunk, 10 Aug. 2009, Karasiński 3707 (D.K.); 372D, on *Populus* fallen log, 20 Aug. 2009, Karasiński 3993 (D.K.); 413C (H.M.W. M-2153); 571B, on *Betula pendula* fallen trunk, 27 Aug. 1990, Wolkowsky (H.M.W. M-1110); 632D (H.M.W. M-1112); BF, on deciduous trunk, 18 Sept. 1960, Domański (KRAM F-SD 1352).


**Leptoporus mollis** (Pers.) Quél.  
Fig. 11H


**Literature reports:** Domański et al. 1967 (as *Tyromyces mollis*), Domański 1967 (as *Tyromyces mollis*), Domański et al. 1973 (as *Tyromyces mollis*), Bujakiewicz et al. 1992 (as *Tyromyces mollis*), Skirgiel 1997 (as *Tyromyces mollis*), Niemelä 2013.

**Remarks.** This species is not common in the study area. In Poland its largest known population was recently found in Kampinos National Park (Karasiński et al. 2015).

**Lindneria flava** Parmasto

**Literature reports:** Domański 1984, Niemelä 2013.

**Remarks.** Domański (1984), following Parmasto (1968), reported the species from the BF but it was described based on material collected in the Belarusian part of the BF. We did not find it in the Polish part of the BF but Niemelä (2013) recently reported it based on a new record.

**Loweomyces fractipes** (Berk. & M. A. Curtis) Jülich  
Fig. 12A

**Specimens examined:** 417 (W. Szafer Landscape Reserve), on fallen branch, 15 Sept. 2011, Karasiński 6289 (D.K.).

**Literature reports:** None. The species is new for the BF.

**Remarks.** This may be a rare species in the study area or else undercollected due to its occurrence in wet places often inaccessible for collecting, flooded during the vegetative season. It was recorded only in the W. Szafer Landscape Reserve, outside the BNP borders. Basidiomata of *L. fractipes* are often stipitate or spathulate, and usually small. It grows on fine woody debris, especially fallen branches of deciduous trees lying on the ground in wet or periodically flooded places. Its basidiomata are often produced during periods when these habitats are temporarily dried. The species is slightly similar to *Spongipellis delectans* (Peck) Murrill, especially in the initial stages of basidiomata development. The latter inhabits coarse woody debris (often dead standing trees) and has significantly larger basidiomata with larger, sinuous pores, dissepiments becoming lacerate to dentate or even hydnoid with age, and longer basidia with larger basidiospores.

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**Mensularia radiata** (Sowerby) Lázaro Ibiza

*Fig. 12B*


**Literature reports:** Błoński et al. 1888 (as *Polyergus radiatus*), Błoński 1889a (as *Ocheropus radiatus*), Orłoś 1951 (as *Polystictus radiatus*), Orłoś 1961, Domański et al. 1967, Domański 1967, Anonymous 1968 (as *Inonotus radiatus*), Bujakiewicz et al. 1992 (as *Inonotus radiatus*), Bujakiewicz 1994 (as *Inonotus radiatus*), Jaroszewicz 1996 (as *Inonotus radiatus*), Grzywacz et al. 1996 (as *Inonotus radiatus*), Skirgiełło 2013 (as *Inonotus radiatus*), Niemelä 2013 (as *Inonotus radiatus*).

**Remarks.** In the study area it is a common species on *Alnus* and *Corylus*.

**Meripilus giganteus** (Pers.) P. Karst.

**Specimens examined:** 414B, at base of *Quercus* stump, 25 Aug 2001, Wołkowycki (H.M.W. M-1659).


**Remarks.** This distinctive species with a large compound basidiome was confirmed in recent studies by only one collection from forest section 414B in the western part of the BF in the vicinity of Hajnówka. According to local people it also occurs in the Palace Park in Białowieża. Niemelä (2013) reported it based on personal information from Anna Kujawa.

**Obba rivulosa** (Berk. & M. A. Curtis) Miettinen & Rajchenb.

**Specimens examined:** BF, on fallen branch of *Pinus*, 25 Oct. 1955, S. Domaiski (KRAM F-SD 5445 as *Physisorpinus rivulosus*).

**Literature reports:** Karasiński et al. 2009 (as *Ceriporiopsis rivulosa*), Niemelä 2013.

**Remarks.** This is an extremely rare species in the study area and also in Europe. It is known from Finland, France, Italy and the former Yugoslavia (Ryvarden & Melo 2014).

**Oligoporus balsameus** (Peck) Gilb. & Ryvarden

**Specimens examined:** 340F, on *Quercus robur* log, 6 July 2009, Karasiński 3295 (D.K.); 370C, on rotten *Picea* log, 15 Oct. 2009, Karasiński 4733 (D.K.).

**Literature reports:** Skirgiełło 1998 (as *Tyromyces kymatodes*), Niemelä 2013 (as *Postia balsamea*).

**Remarks.** This species is rare in the study area. It is characterized by having pileate or effused-reflexed basidiomata with a faintly zonate pileus surface, thick-walled fusiform cystidia that are sparsely encrusted at the apex, and oblong ellipsoidal, slightly thick-walled basidiospores 3.5–5.5 × 2.2–2.8 µm (in specimens examined).

**Oligoporus ptchogaster** (Ludwig) R. & O. Falck


**Literature reports:** Orłoś 1961 (as *Leptoporus ptchogaster*), Szczepkowski et al. 2008, Gierczyk et al. 2013 (as *Postia ptchogaster*), Niemelä 2013 (as *Postia ptchogaster*), Gierczyk et al. 2014 (as *Postia ptchogaster*).
Oligoporus romellii (M. Pieri & Rivoire)
Niemelä


**Literature reports:** Niemelä 2013.

**Remarks.** In the BF this species grows exclusively on *Picea*, unlike the similar *O. sericeomollis* (Romell) Jülich which seems locally to be associated with dead wood of *Pinus*. The morphological differences between these two species are small and mostly refer to differences in the shape and size of encrusted cystidia. As a rule, *O. romellii* has more slender and narrower cystidia (up to 6 µm wide), often with almost thin to slightly thick walls, while *O. sericeomollis* produces cystidia up to 10 µm wide with very thick walls up to 3.5 µm in specimens examined. For more details see Pieri and Rivoire (2006) and Ryvarden and Melo (2014).

Oligoporus sericeomollis (Romell) Jülich


**Literature reports:** Domański 1965 (as *Clitocybe tomentosa*), Domański 1967 (as *Polystictus tomentosus*), Orłoś 1961 (as *Polystictus tomentosus*), Orłoś 1960 (as *Polystictus tomentosus*), Domański 1967, Anonymous 1968 (as *Mucronoporus tomentosus*), Oronia tomentosa (Romell) H. Jahn, Oronia leporina (Fr.) H. Jahn

**Specimens examined:** 255D, on trunk of *Picea* living tree, 19 Sept. 2011, Karasiński 6349 (D.K.); 369, on living tree of *Picea*, 27 Aug. 1973, Wojewoda s.n. (KRAM F-34254); 417A, on *Picea* dead standing trunk, 28 Aug. 2012, Wolkowycki (H.M.W. M-0188); 417C (H.M.W. M-0189); 443, W. Szafer Landscape Reserve, on standing trunk of *Picea*, 29 Sept. 2006, Karasiński 1642 (KRAM F-47394); 500, in the vicinity of Podolany Reserve, on dead standing trunk of *Picea*, 27 Sept. 2006, Karasiński 1636 (KRAM F-47393); 443, on living tree of *Picea*, 25 Oct. 1959, Domański (KRAM F-SD 609 as *Polystictis tomentosus* var. *triculum*).

**Literature reports:** Kotlaba & Lazebníček 1967 (as *Mucronoporus circinatus*), Anonymous 1968 (as *Mucronoporus tomentosus* var. *circinatus*), Domański et al. 1973 (*Mucronoporus tomentosus* var. *triculum*), Wojewoda 2003 (as *Inonotus leporinus*), Karasiński et al. 2009 (as *Inonotus leporinus*), Szczepkowski et al. 2011 (as *Inonotus leporinus*), Niemelä 2013 (as *Pellotopsis leporinus*).

**Remarks.** This is a rare species associated with *Picea*, on which it is a parasite and saprobe. Basidomata are mainly observed on bark of dead standing trees.

Onnia tomentosa (Fr.) P. Karst.

**Specimens examined:** 285A, on the ground in mixed forest (*Quercus, Picea, Carpinus*), 29 July 2009, Karasiński 3659 (D.K.); 289C, on the ground in mixed forest under *Picea*, 12 Aug. 2009, Karasiński 3746E (D.K.); 315A, on roots of *Picea* stump, 18 Aug. 2009, Karasiński 3902 (D.K.); 369B, on base of dead standing trunk of *Pinus*, 13 Sept. 2011, Karasiński 6231 (D.K.); 699C (H.M.W. M-3613); 443, W. Szafer Landscape Reserve, on the ground under *Pinus*, 18 Oct. 1960, Domański (KRAM F-SD 1373); BNP, Poprzeczny Tryb, east of ‘Mogilki’ graves, on the ground in *Carpinus-Picea-Quercus* mixed forest, 11 Sept. 2009, Niemelä 8596 (KRA).

**Literature reports:** Błoński et al. 1888 (as *Polypora tomentosa*), Orłoś 1960 (as *Polystictus tomentosus*), Orłoś 1961 (as *Polystictus tomentosus*), Domański 1967, Anonymous 1968 (as *Mucronoporus tomentosus*), Bujakiewicz 2003, Bujakiewicz & Kujawa
2010, Szczepkowski et al. 2010 (as Inonotus tomentosus), Niemelä 2013 (as Pelloporus tomentosus).

**Onnia triquetra** (Pers.) Imazeki


**Literature reports:** Błoński 1889a (as Ochroporus triqueter), Siemaszko 1925 (as Polyporus circinatus), Domański et al. 1967 (as Mucronoporus tomentosus var. triqueter), Niemelä 2013 (as Pelloporus triqueter).

**Remarks.** This species is rare in the study area or undercollected.

**Oxyporus corticola** (Fr.) Ryvarden


**Literature reports:** Domański 1965, 1972b, Niemelä 2013, Gierczyk et al. 2014.

**Remarks.** In the study area this is a rather common species showing a clear preference for Populus. The microscopically similar *Oxyporus ravidus* (Fr.) Bondartsev & Singer produces pileate basidiomata and according to recent observations in the BF it grows on other hardwoods.

**Oxyporus latemarginatus** (Durieu & Mont.) Donk

**Specimens examined:** 417 (W. Szafer Landscape Reserve), on bark of Populus fallen trunk, 20 Sept. 2013, Karasiński 9968 (D.K.).

**Literature records:** None. The species is new for the BF.

**Remarks.** This species is similar to *Oxyporus obducens* (Pers.) Donk but differs by having larger pores and basidiospores.

**Oxyporus obducens** (Pers.) Donk

**Specimens examined:** 398B, on Ulmus fallen trunk, 14 Aug. 2009, Karasiński 3799 (D.K.).

**Literature reports:** Siemaszko 1925 (as *Polyporus obducens*), Domański 1965, 1972b, Niemelä 2013.

**Remarks.** This species appears to be very rare in the study area. It has annual resupinate basidiomata with 4–6 pores per mm, and small, ellipsoidal basidiospores 3.5–4.5 × 2.5–3 µm (in specimen examined). The morphologically similar *O. corticola* and *O. latemarginatus* have larger pores and basidiospores. *Oxyporus populinus* (Schumach.) Donk usually forms perennial, effused-reflexed basidiomata (rarely annual and resupinate), and has subglobose basidiospores.

**Oxyporus populinus** (Schumach.) Donk

**Specimens examined:** 163C, on trunk of Acer platanoides living tree, 12 July 2009, Karasiński 3444 (D.K.); 221A (H.M.W. M-0156); 306C, at base of trunk of Acer platanoides living tree, 24 Mary 1993, Wolkowyski (H.M.W. M-1136); 316C, on trunk of Acer platanoides living tree, 27 Apr. 2010, Karasiński 5281A (D.K.); 372C, on trunk of Acer platanoides living tree, 5 July 2009, Karasiński 3262A (D.K.); 375B (D.K. 10969); 400B, on Acer platanoides large fallen branch, 5 July 2009, Karasiński 3262 (D.K.); 413C (H.M.W. M-1102); 439A (H.M.W. M-2000); 439C (H.M.W. M-0987); 463B (H.M.W. M-1496); 487B (H.M.W. M-1380).


**Remarks.** All recent records are from *Acer platanoides*.
**Oxyporus ravidus** (Fr.) Bondartsev & Singer

Fig. 13D


Remarks. This species was previously reported from southeastern Poland by Domański (1973 as *Poria elongata* and *Perenniporia elongata*) based on a specimen collected in the Bieszczady National Park (KRAM F-SD 4820!). It appears to be a very rare Eurasian species associated with deciduous wood and old-growth forests. It is characterized by having annual, resupinate basidiomata, amyloid skeletal hyphae dissolving in KOH, and ellipsoidal or ovoid basidiospores 4.0–5.5 × 3.0–3.8 µm (in specimens examined), often with a slightly concave adaxial side, negative in Melzer’s reagent. The genus *Yuchengia* B. K Cui & Steffen was recently proposed to accommodate this species (Zhao *et al*. 2013).

**Perenniporia medulla-panis** (Jaq.) Donk

Fig. 13E


**Perenniporia narymica** (Pilát) Pouzar


Literature reports: None. The species is new for the BF.

**Perenniporia subacida** (Peck) Donk

Fig. 13G


Remarks. This species is characterized by having very large, resupinate and perennial basidiomata, with a distinctly stratified context, strongly dextrinoid skeletal hyphae up to 5 µm in diam., slender binding hyphae, and ovoid to ellipsoidal, often weakly dextrinoid basidiospores 4.8–6.5 × 3.8–4.6 µm. In the BF it grows almost exclusively on *Picea*, once observed on *Pinus*. The species is very rare in Poland, known only from two localities – the BF and the Augustów Forest (Holec & Pouzar 1998; Wojewoda 2003).

**Phaeolus schweinitzii** (Fr.) Pat.

Fig. 13H

Specimens examined: **398**, on trunk of *Picea*, 21 Sept. 2007, Karasiński 070921-7775 (D.K.); **412A**, at base of *Pinus* dead standing trunk, 9 Sept. 2001, Wolkowycki (H.M.W. M-1749); **416B** (H.M.W. ...


*Phellinidium ferrugineofuscum* (P. Karst.)

Fiasson & Niemelä

**Specimens examined:** **135D**, on bark of *Picea* fallen trunk, 8 July 2009, *Karasiński* 3336 (D.K.); **194D** (D.K. 3665C1); **225B** (D.K. 3685); **255D** (D.K. 5218); **261A** (D.K. 3376, DK 3388 DK 3393); **285A** (D.K. 4223A); **285C** (D.K. 5287B); **314A** (D.K. 3388); **315B** (D.K. 3913); **316C** (D.K. 5260E); **318D** (D.K. 3879); **319C** (D.K. 3607); **340B** (D.K. 4223A); **340G** (D.K. 4225); **340G** (4305A); **346D** (D.K. 4679A); **369A** (D.K. 3490); **369C** (37347); **370C** (D.K. 3703D); **373D** (D.K. 4679A, DK 4994); **374D** (D.K. 3534A); **375B** (D.K. 3579); **399C**, on bark of *Picea* fallen log, 1 Nov. 2009, *Karasiński* 5022 (D.K.).


**Remarks.** The species is associated with dead wood of *Picea* in an early stage of decomposition. It is characterized by having annual to biennial, resupinate basidiomata with small pores 7–9 per mm, long, tramal setae, lacking hymenial setae and having allantoid basidiospores. *Phellinidium ferrugineofuscum* was collected many times during recent studies and seems to be quite common in the study area. However, in Poland it is so far not known outside the BF (Wojewoda 2003).

*Phellinopsis conchata* (Pers.) Y. C. Dai


**Literature reports:** Orłoś 1960 (as *Phellinus conchatus*), Gierczyk et al. 2013 (as *Phellinus conchatus*), Niemelä 2013 (as *Phellinus conchatus*).

**Remarks.** This species appears to be rare in the study area or undercollected.

*Phellinus alni* (Bondartsev) Parmasto


**Literature reports:** *Niemelä* 2013.

*Phellinus igniarius* (L.) Quél.

**Specimens examined:** **484A** (Łozice), on trunk of *Salix fragilis* living tree, 23 March 1993, *Wolkowycki* (H.M.W. M-1027); **BF**, near bank of the Hwoźna River, on *Salix* fallen branch, 23 Sept. 1965, *Domański* (KRAM F-SD 4876).


**Remarks.** Some specimens given in literature reports may in fact represent other species from the *Phellinus igniarius* complex, e.g., *P. alni*, *P. nigricans* (Fr.) P. Karst. or *P. populicola* Niemelä. Among several specimens collected in the BF and preserved in *Domański*’s herbarium only one (cited above) belongs to *Phellinus igniarius* s.str.

*Phellinus laevigatus* (Fr.) Bourdot & Galzin

**Specimens examined:** **194D**, on bark of *Betula pubescens* fallen trunk, 30 July 2009, *Karasiński* 3661 (D.K.); **261A**, on *Betula pendula* fallen trunk, 10 July 2009, *Karasiński* 3373 (D.K.); **318B**, on *Betula* sp.


Phellinus nigricans (Fr.) P. Karst. Fig. 14F


LITERATURE REPORTS: None. This species is new for the BF.

REMARKS. This species appears to be rare in the study area and in its strict sense it was previously not reported from the BF. Among specimens of Phellinus igniarius s.l. deposited in KRAM F-SD there is no specimen that fit the genuine Phellinus nigricans.

Phellinus populincola Niemelä Fig. 14G


REMARKS. This is a fairly common species in old aspen stands. During recent studies it was recorded many times. Outside the BF it is very rare in Poland, known from only a few sites (Wojewoda 2003).

Phellinus tremulae (Bondartsev) Bondartsev & Borissov Fig. 14H


Phellinus tuberculatus (Baumq.) Niemelä

SPECIMENS EXAMINED: Białowieża village (Zastawa), on trunk of Prunus domestica in orchard, 20 July 1990, Wolkowycki (H.M.W. M-1026); Masiewo village, on Prunus domestica fallen branch, 16 Nov. 2006, Wolkowycki (H.M.W. M-0045).

LITERATURE REPORTS: Niemelä 2013.

REMARKS. This species was observed on cultivated Prunus domestica L. in anthropogenic habitats outside forest.

Phellolupus nigrolimitatus (Romell) Niemelä, T. Wagner & M. Fisch. Fig. 15A


3743D (D.K.); 314C (D.K. 5175, DK 3306); 314D (D.K. 5196B); 315A (D.K. 3893B); 316C (D.K. 5275); 319C (D.K. 3748); 340B (3278A); 340F (D.K. 4197A1); 341B (D.K. 4407); 341C (D.K. 4767B); 341D (5251B); 344A (D.K. 3836); 344B (D.K. 3854); 346D (D.K. 3582); 346D (D.K. 4688); 369A (D.K. 3480A); 370C (D.K. 3698D); 373B (D.K. 3460D); 373D (D.K. 3449A); 374C (D.K. 3408D); 374D (D.K. 3415B); 374D (D.K. 3554C); 375A (D.K. 4285A); 398G, on Picea fallen trunk, 24 July 2009, Karasiński 3498A (D.K.); 399A (D.K. 5028); 399B (D.K. 5034); 399C (D.K. 5072); 400A (D.K. 5339A); 402B (H.M.W. M-3654).


**Physisporinus sanguinolentus** (Alb. & Schwein.) Pilát

*Fig. 15B*


**Literature reports**: Domański 1965, 1967 (as Podoporia sanguinolenta), Anonymous 1968 (as Podoporia sanguinolenta), Domański 1972b (as Rigidoporus sanguinolentus), Szczepkowski et al. 2008, Niemelä 2013 (as Rigidoporus sanguinolentus).

**Physisporinus vitreus** (Pers.) P. Karst.  

*Fig. 15C*


**Literature reports**: Domański 1967 (as Podoporia vitrea), Gierczyk et al. 2013, Niemelä 2013 (as Rigidoporus sanguinolentus), Gierczyk et al. 2014.

**Remarks**. Microscopically similar Rigidoporus undatus (Pers.) Donk has tramal cystidia with small caps of apical encrustation, smaller pores, larger basidiospores and more robust basidiomata.

**Piptoporus betulinus** (Bull.) P. Karst.


**Polyporus arcularius** (Batsch) Fr.  

*Fig. 15D*

**Specimens examined**: 226A, on Corylus avellana fallen branch, 30 July 2009, Karasiński 3672 (D.K.); 316C, on Carpinus fallen branch, 27 Apr. 2010, Karasiński 5282 (D.K.); BF, on hardwood, 1 May 1959, Domański (KRAM F-SD 611); BF, on Carpinus fallen trunk, 28 Oct. 1956, Domański (KRAM F-SD 610).


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**Polyporus badius** (Pers.) Schwein. Fig. 15E

Specimens examined: 214A (H.M.W. M-1473); 369A, on fallen branch of deciduous tree, 14 July 2009, Karasiński 3481C (D.K.); 398B, on Ulmus sp. fallen trunk, 14 Aug. 2009, Karasiński 3799 (D.K.); 413B (H.M.W. M-1645); 572 (Michnówka Reserve), on deciduous fallen trunk, 24 May 2006, Karasiński 060524-5518 (D.K.); 414D (H.M.W. M-1458); 487B (H.M.W. M-1624); 633C (H.M.W. M-0927).


**Polyporus brumalis** (Pers.) Fr. Fig. 15F

Specimens examined: 214D (D.K. 11018); 272D (H.M.W. M-0555); 306A (H.M.W. M-0915); 329D (H.M.W. M-0738); 334D (H.M.W. M-0921); 355A (H.M.W. M-0906); 356A, on Corylus fallen trunk, 12 Dec. 1992, Wołkowycki (H.M.W. M-0898); 362A (H.M.W. M-0903); 367C (H.M.W. M-0883); 383A (H.M.W. M-0889); 384B (H.M.W. M-0894); 385A (H.M.W. M-0922); 402A (H.M.W. M-0577); 403A (H.M.W. M-0919); 404A (H.M.W. M-0900); 413B (H.M.W. M-1861); 414A (H.M.W. M-1862); 416C (H.M.W. M-0878); 437D (H.M.W. M-1871); 438A (H.M.W. M-1298); 439D (H.M.W. M-3047); 440A (H.M.W. M-0908); 461B (H.M.W. M-0977); 462B (H.M.W. M-0910); 463D (H.M.W. M-0231); 464A (H.M.W. M-0892); 466C (H.M.W. M-0252); 476A (H.M.W. M-0193); 486B (H.M.W. M-0193); 488C (H.M.W. M-0975); 501C (H.M.W. M-0905); 537B (H.M.W. M-0904); 575A (H.M.W. M-2817); 596C (H.M.W. M-0885); 628B (H.M.W. M-0891); 632A (H.M.W. M-0917); 661B (H.M.W. M-0736); 694C (H.M.W. M-0887); 725A (H.M.W. M-0739); BF, on rotten hardwood, 1 May 1959, Domański (KRAM F-SD 2691 as Polyporus subarcularius); BF, on fallen branch of deciduous tree, 29 Apr. 1960, Domański (KRAM F-SD 1262 as Polyporus subarcularius).


**Polyporus ciliatus** Fr. Fig. 15G

Specimens examined: 340D, on Tilia fallen branch, 6 July 2009, Karasiński 3275 (D.K.); 384D (H.M.W. M-0974); 412D, on well-rotted wood remnants, 7 July 2003, Wołkowycki (H.M.W. M-3015); 437B (H.M.W. M-0040); 442B (H.M.W. M-2013); 513B (H.M.W. M-1427).


**Polyporus melanopus** (Pers.) Fr. Fig. 15G


**Polyporus squamosus** (Huds.) Fr.

Specimens examined: 412D, on Corylus avellana fallen trunk, 7 July 2003, Wołkowycki (H.M.W. M-3013); 414D, on fallen trunk, 3 June 2001, Wołkowycki (H.M.W. M-2055); 485B, on fallen trunk, 11 June 2003, Wołkowycki (H.M.W. M-3012); BF, on Acer trunk, 9 Aug. 1962, Domański (KRAM F-SD 4198).


**Polyporus tuberaster** (Jacq.) Fr. Fig. 15H

Specimens examined: 226, on fallen branch of deciduous tree, 2001, Bujakiewicz (KRAM); 313A, on very rotten wood of deciduous tree, 25 July 2009, Karasiński 3305 (D.K.); 369A, on Acer platanoides fallen trunk, 14 July 2009, Karasiński 3481b (D.K.); 464C, on Salix caprea fallen trunk, 22 Aug. 1999, Wołkowycki (H.M.W. M-1396); BF, on Carpinus fallen
branch, 10 June 1966, Domański (KRAM F-SD 4993 as Polyporus coronatus).


*Polyporus umbellatus* (Pers.) Fr.

**Specimens examined:** 319C, on the ground under Carpinus, Quercus and Tilia, 13 Aug. 2009, Karasiński 3761 (D.K.).

**Literature reports:** Błoński et al. 1888 (as Polyporus umbellatus), Błoński 1889a (as Polyporus ramosissimus), Orłoś 1955b, Domański et al. 1967 (as Grifola umbellata), Domański et al. 1973, Skirgiello 1976 (as Grifola umbellata), Bujakiewicz et al. 1992 (as Grifola umbellata), Skirgiello 1997 (as Grifola umbellata), Niemelä 2013.

*Polyporus varius* (Pers.) Fr.

**Specimens examined:** 356C, on Salix caprea, 23 Apr. 1993, Wolkowycki (H.M.W. M-0926); 439C (in the vicinity of Głęboki Kąt Reserve), on wood, 26 Nov. 2003, Wolkowycki (H.M.W. M-3050).


*Porodaedalea chrysoloma* ((Fr.) Fiasson & Niemelä


**Literature reports:** Siemaszko 1923 (by mis-
take as Polyporus annosus, misidentification revised in Siemaszko 1925 as Trametes abietis), Pilát 1950 (as Phellinus abietis), Domański et al. 1967 (as Phellinus pini var. abietis), Domański 1967 (as Phellinus pini var. abietis), Domański 1972b (as Phellinus chrysoloma), Szczepkowski et al. 2008 (as Phellinus chrysoloma), Niemelä 2013 (as Phellinus chrysoloma).

*Porodaedalea pini* (Brot.) Murrill


*Porotheleum fimbriatum* (Pers.) Fr.


**Literature reports:** Pilát 1950, Domański 1967 (as Stromatoscypha fimbriata).

*Poromyces nucidus* (Pers.) Jülich

Literature reports: Błoński et al. 1888 (as *Polyporus mucidus*), Domański 1965 (as *Fibuloporia mollusca*), Domański 1972b (as *Fibuloporia donkit*), Szczepkowski et al. 2008 (as *Ceriporiopsis mucida*), Niemelä 2013, Gierczyk et al. 2014 (as *Ceriporiopsis mucida*).

**Postia alni** Niemelä & Vampola  Fig. 16E


Literature reports: Jaroszewicz 1996 (as *Tyromyces subcaesius*), Szczepkowski et al. 2008 (as *Oligoporus alni*), Niemelä 2013, Gierczyk et al. 2014.

**Postia caesia** (Schrad.) P. Karst.  Fig. 16F


**Postia ceriflua** (Berk. & M. A. Curtis) Jülich  Fig. 16G


Literature reports: Niemelä 2013.

Remarks. According to Wojewoda (2003) this species was reported from Poland by Ryvarden and Gilbertson (1994) ‘on map of Europe, without localities’, but this is a mistake made by Wojewoda (see Ryvarden & Gilbertson 1994: 407).

**Postia floriformis** (Quél.) Jülich  Fig. 16H


Literature reports: Domański et al. 1967 (as *Tyromyces floriformis*), Domański 1967 (as *Tyromyces floriformis*), Domański et al. 1973 (as *Tyromyces floriformis*), Niemelä 2013.

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Postia folliculocystidiata (Kotl. & Vampola) Niemelä & Vampola


Literature reports: None. This species is new for Poland.

Remarks. This is possibly a very rare species in Europe, characterized by having small pendent basidiomata attached to the substrate in one point, and large, pyriform, capitate or broadly clavate hymenial cystidia distinctly projecting above the basidia. According to Ryvarden and Melo (2014) Oligoporus folliculocystidiatus Kotl. & Vampola (= Postia folliculocystidiata) and Leptoporus minusculoides Pilát ex Pilát [= Postia minusculoides (Pilát ex Pilát) Boulet] are synonyms of Postia cerefructu. However, on the basis of materials recently collected in the BF, all represent distinct species. See also Vampola et al. (2014).

Postia fragilis (Fr.) Jülich


Literature reports: Domański et al. 1967 (as Tyromyces fragilis), Domański 1967 (as Tyromyces fragilis), Anonymous 1968 (as Tyromyces fragilis), Domański et al. 1973 (as Tyromyces fragilis), Szczepkowski et al. 2008 (as Oligoporus fragilis), Niemelä 2013.

Postia guttulata (Peck) Jülich

Specimens examined: 105B (D.K. 3440); 111B (D.K. 3370C); 135C (D.K. 3342C); 135D, on Picea trunk, 8 July 2009, Karasiński 3340 (D.K.); 224B (D.K. 3948A); 224B (D.K. 3952A); 226A (D.K. 3687F); 254D (D.K. 3804B); 255D (D.K. 3653); 257D, on Picea stump, 21 Sept. 2009, Karasiński 4342 (D.K.); 261A (D.K. 3375); 285A, on Picea fallen trunk, 29 July 2009, Karasiński 3617D (D.K.); 285C (D.K. 5299C); 287C (D.K. 3779); 289C (D.K. 3746B); 315B (D.K. 3913E); 316B (D.K. 3789A); 318B (D.K. 3744G); 319C (D.K. 3614); 340A (D.K. 4227A); 340C (D.K. 4319); 342C (D.K. 4787B); 345A (D.K. 3718F); 374D (D.K. 4196A); 375A (D.K. 4279B); 402 (D.K. 3965B); 402B (H.M.W. M-3649); 417D (H.M.W. M-3109); 698 (Starzyna Reserve), on Picea stump, 28 Sept. 2006, Karasiński 060928-6172 (D.K.).

Literature reports: Domański 1967 (as Tyromyces guttulatus), Anonymous 1968 (as Tyromyces stipticus f. guttulatus), Domański et al. 1973 (as Tyromyces guttulatus), Niemelä 1978a (as Tyromyces guttulatus), Szczepkowski et al. 2008 (as Oligoporus guttulatus), Karasiński et al. 2009, Szczepkowski et al. 2010 (as Oligoporus guttulatus), Gierczyk et al. 2013, Niemelä 2013, Gierczyk et al. 2014.

Remarks. This species is rather common in the BF on stumps and fallen trunks of Picea. In Poland the species has not been so far recorded outside the BF (Wojewoda 2003).

Postia lactea (Fr.) P. Karst.


Literature reports: Błoński 1889a (as Polyporus lacteus), Pilát 1950 (as Leptoporus lacteus), Orloš 1960, 1961 (as Leptoporus lacteus), Domański et al. 1967 (as Tyromyces lacteus), Kotlabä & Lazebniček 1967 (as Tyromyces lacteus), Anonymous 1968 (as Tyromyces lacteus), Domański et al. 1973 (as Tyromyces lacteus), Bujakiewicz et al. 1992 (as Tyromyces lacteus), Skirgello 1997 (as Tyromyces lacteus).

Remarks. Postia lactea is similar to P. tephroleuca (Fr.) Jülich and P. stiptica (Pers.) Jülich but differs in having context without the bitter taste that characterizes the latter species, and in
having a pure white pileal surface in contrast to the mouse-grey pileal surface of the former species. The hymenial parasite *Tremella polyoporina* D. A. Reid was found inside the tubes of specimen *Karasiński* 4404.

**Postia lateritia** Renvall

**Specimens examined:** BF, on *Pinus*, 28 Aug. 1956, Domański (KRAM F-SD 5374 as *Tyromyces fragilis*); 370C, Poprzęcny Tryb, east of ‘Mogilki’ graves, on decorticate *Picea* fallen trunk, 9 Sept. 2009, Niemelä 8571 (KRAM F-58165).

**Literature reports:** Niemelä 2013.

**Remarks.** This species is similar to *Postia fragilis* and is easily confused with it. It was previously known only from Northern Europe (Fennoscandia) and one locality in Spain (Renvall 1992; Ryvarden & Melo 2014). One specimen preserved in KRAMF-SD, originally identified by Domański as *Tyromyces fragilis*, very well fits the species concept of *Postia lateritia*. It has basidiospores 4.8–6.2 × 1.2–1.4 μm, that is, more allantoid and narrower than in *P. fragilis*. The latter has basidiospores 1.6–2.2 μm wide. Another species similar to *P. lateritia* is *P. leucomalrella* (Murrill) Jülich, which has almost identical basidiospores but forms hymenial gloeocystidia.

**Postia leucomalrella** (Murrill) Jülich  Fig. 17E

**Specimens examined:** 135C, on *Pinus* fallen trunk, 8 July 2009, Karasiński 3342b (D.K.); 284C, 340, on *Pinus* fallen log, 16 Sept. 2009, Karasiński 4229 (D.K.); 374, on *Pinus* fallen log, 26 July 2009, Karasiński 3542 (D.K.); 387 (W. Szafer Landscape Reserve), on *Pinus* log, 20 Sept. 2013, Karasiński 10099B (D.K.); 398B, on *Picea*, 31 Oct. 2001, Wólkowyczy (H.M.W. M-2181); 698 (Starzyńska Reserve), on *Pinus* trunk, Piątek s.n. (D.K. 6625).

**Literature reports:** Anonymous 1968 (as *Tyromyces gloeocystidatus*), Niemelä 2013.

**Postia lowei** (Pilát ex Pilát) Jülich  Fig. 17F


**Remarks.** An excellent description of the species and an extensive discussion of the features differentiating it from all similar and related species are provided by Vampola et al. (2014).

**Postia luteocaesia** (A. David) Jülich  Fig. 17G

**Literature reports:** Niemelä 2013.

**Remarks.** This species was reported by Niemelä (2013) without a precise locality. We did not find it in the BF.

**Postia minusculoides** (Pilát ex Pilát) Boulet  Fig. 17H


**Literature reports:** None. This species is new for Poland.

**Remarks.** This species is characterized by having minute pendent basidiomata, thin-walled hyphae in both context and tube trama, numerous slender fusoid cystidioles in the hymenium, and narrowly ellipsoidal to short-cylindrical basidiospores 4.2–5.2 × 2.4–2.6 μm (in specimens studied). *Postia minusculoides* is considered by some mycologists (e.g., Ryvarden & Gilbertson 1994, Ryvarden & Melo 2014) to be a synonym of *P. ceriflua*, which indeed has basidiospores similar in shape and size but differs by having larger and usually effused-reflexed or even pileate basidiomata, the absence of cystidioles in the hymenium, and the presence of thick-walled hyphae in the context and trama of tubes.
Postia stiptica (Pers.) Jülich


Remarks. The specimens collected in the BF have a relatively large population in the BF but so far has been found only in the BNP area and never outside its borders. The species is characterized by having usually large basidiomata with an orange-yellow hymenial surface and pores larger than 1 mm in diameter, which finally form an irpicoid to denate or even almost hydnoid hymenophore. In rare cases, specimens of this species may be almost white, but such an albinoform was observed only once (specimen Karasiński 3478).

Pycnoporellus fulgens (Fr.) Jülich


Remarks. The specimens collected in the BF have a relatively large population in the BF but so far has been found only in the BNP area and never outside its borders. The species is characterized by having usually large basidiomata with an orange-yellow hymenial surface and pores larger than 1 mm in diameter, which finally form an irpicoid to denate or even almost hydnoid hymenophore. In rare cases, specimens of this species may be almost white, but such an albinoform was observed only once (specimen Karasiński 3478).
Pycnoporus cinnabarinus (Jacq.) P. Karst.

Specimens examined: 214D (Szczekotowo Reserve), on Carpinus fallen trunk, 17 Oct. 2014, Karasiński 11017 (D.K.); 256D (H.M.W. M-3416b); 285A (H.M.W. M-3416a).

Literature reports: Błoński et al. 1888 (as Trametes cinnabarinus), Błoński 1889a (as Polyporus cinnabarinus), Karpiński 1949 (as Trametes cinnabarinus), Skirgiełło 1965, Niemelä 2013.

Rhodonia placenta (Fr.) Niemelä, K.-H. Larss. & Schigel


Remarks. The species is quite common in the study area on wood of conifers. The basidiomata of this species vary in color from pure white to vivid pink.

Rigidoporus crocatus (Pat.) Ryvarden Fig. 18E


Remarks. This species is characterized by having resupinate, perennial basidiomata with a pinkish brown to dull brick-red hymenial surface and rigid consistency, a monomitic hyphal system with clampless hyphae forming dense structures in all parts of the basidiome, the absence of cystidia and the presence of subglobose basidiospores. It is quite frequently observed in the BF, especially in BNP, on both hardwoods and conifers (Betula, Carpinus, Fraxinus, Quercus, Picea, once on Pinus). In southern Poland it also occurs on Abies alba Mill.

Rigidoporus undatus (Pers.) Donk Fig. 18F


Remarks. The species is characterized by having resupinate, perennial basidiomata with a pinkish brown to dull brick-red hymenial surface and rigid consistency, a monomitic hyphal system with clampless hyphae forming dense structures in all parts of the basidiome, the absence of cystidia and the presence of subglobose basidiospores. It is quite frequently observed in the BF, especially in BNP, on both hardwoods and conifers (Betula, Carpinus, Fraxinus, Quercus, Picea, once on Pinus). In southern Poland it also occurs on Abies alba Mill.
Remarks. This species is similar to Physioporus vitreus but differs by having more robust basidiomata with smaller pores (6–8 per mm vs. 4–6 in P. vitreus), slightly smaller basidiospores and the presence of thin to thick-walled cystidia of tramal origin, apically encrusted, embedded in the trama and not projecting.

Sarcoporia polyspora P. Karst. Fig. 18G


Literature reports: Domański 1965, 1967 (as Tyromyces subcartilagineus), Kotlaba & Lażeńnický 1967 (as Parmastomyces kravtzevianus), Anonymous 1968 (as Tyromyces subcartilagineus), Domański 1972b (as Parmastomyces kravtzevianus), Szczepkowski et al. 2010 (as Parmastomyces transmutans), Niemelä 2013.

Schizopora flavipora (Berk. & M. A. Curtis ex Cooke) Ryvarden


Literature reports: Domański 1969c (as Schizopora phellinoides), Bujakiewicz et al. 1992 (as Schizopora carneo-lutea), Gierczyk et al. 2013, Niemelä 2013 (as Hyphodontia flavipora), Gierczyk et al. 2014.

Schizopora paradoxa (Schrad.) Donk Fig. 18H


Schizopora radula (Pers.) Hallenb.


Literature reports: Błoński 1889a (as Polyporus radula), Domański 1965 (as Chaetoporus radulus), Niemelä 2013 (as Hyphodontia radula), Gierczyk et al. 2014.

Sidera lenis (P. Karst.) Miettinen Fig. 19A


Remarks. The materials of Domański deposited in KRAM F-SD were not revised; they need to be re-examined to determine which of the two European poroid Sidera species were reported in the above-mentioned literature under the names Poria lenis and Amylopora lenis.

Sidera vulgaris (Fr.) Miettinen Fig. 19B

Specimens examined: 224B, on Pinus fallen branch, 19 Aug. 2009, Karasiński 3942, 3950 (D.K.); 226A, on Pinus fallen log, 9 July 2009, Karasiński 3348 (D.K.);

Literature reports: Niemelä & Dai 1997 (as Skeletocutis vulgaris), Niemelä 2013.

Remarks. This species differs from S. lenis by having capitate hyphal ends on dissepiment edges, and smaller basidiospores 3–4 µm long (4–5 µm long in S. lenis).

Skeletocutis amorpha (Fr.) Kotl. & Pouzar

Specimens examined: 135D, on Picea fallen trunk, 8 July 2009, Karasiński 3329 (D.K.); 385C (H.M.W. M-1233); 385D (Sacharewo), on Pinus stump, 10 Feb. 2002, Wołkowycki (H.M.W. M-2704); 438A (H.M.W. M-1300); 466D (H.M.W. M-2101).


Skeletocutis biguttulata (Romell) Niemelä

Fig. 19C


Remarks. Possibly it was also reported previously by Domański (1972b) as Incrustomoria subincarnata. The herbarium specimens deposited in KRAM F-SD were revised by Piątek and Cabala (2005), and all of them represent S. biguttulata.

Skeletocutis brevispora Niemelä

Fig. 19D


Literature reports: Niemelä 2013.

Remarks. This species is a successor on wood previously decayed by Phellinidium ferrugineofuscum, often growing directly on its dead basidiomata. Microscopically the species is characterized by having short allantoid and fairly thick basidiospores 3.2–4.6 × 1.4–1.8 µm (in specimens examined) tapering towards the apiculus, without guttules, and having rather straight, sparsely encrusted hyphal ends at dissepiment edges.

Skeletocutis carneogrisea A. David


Literature reports: Domański et al. 1967 (as Skeletocutis amorpha f. mollusca), Niemelä 2013, Gierczyk et al. 2014.

Remarks. This species is similar to Skeletocutis amorpha but differs by having whitish or slightly greyish tubes in contrast to the yellow-orange or pinkish tubes of the latter species. Skeletocutis carneogrisea is a successor species; its predecessors are species of Trichaptum Murrill.

Skeletocutis chrysella Niemelä

Fig. 19E

Specimens examined: 158, on bark of Picea fallen trunk close to Porodadalea chrysoloma, 18 Sept. 2008, Karasiński 080918-1582 (D.K.); 373, on Picea fallen

**Literature reports:** None. This species is new for Poland.

**Remarks.** This is a successor species on spruce wood previously inhabited by *Porodaedalea chrysoloma*.

*Skeletocutis jelicii* Tortič & A. David  
**Fig. 19F**


**Literature reports:** Niemelä 2013.

**Remarks.** This species differs from other species of *Skeletocutis* Kotl. & Pouzar by having a monomictic hyphal system, ellipsoidal basidiospores (allantoid in other species), and the absence of encrusted hyphal ends on dissepiments.

*Skeletocutis kuehneri*  
**Fig. 19G**

**Specimens examined:** 373C, on *Pinus* fallen log and dead *Trichaptum* sp., 13 July 2009, Karasiński 3469 (D.K.); 373D, on *Picea* fallen log (coexist with *Phellolopilus nigrolimitatus*), 13 July 2009, Karasiński 3449 (D.K.); 399C, on bark of *Picea* big fallen log close to *Trichaptum abietinum* dead basidiomata, 4 July 2009, Karasiński 3241 (D.K.); BNP, NE of the main gate, on *Picea* fallen tree, 10 Oct. 2008, Niemelä 8431 (KRA).

**Literature reports:** Niemelä 2013.

**Remarks.** This species was previously reported from Poland by Piątek and Cabala (2005). The shape and size of basidiospores are the same in *S. kuehneri*, *S. chrysella* and *S. stellae* (Pilát) Jean Keller: allantoid, ca 3–4 × 0.7–1 µm, without guttules. The latter has perennial basidiomata and small pores 7–10 per mm, while in the annual *S. kuehneri* and *S. chrysella* the pores are larger, ca 4–6 per mm. *Skeletocutis kuehneri* is a successor on wood previously inhabited by *Trichaptum* spp. and has a dimitic hyphal structure, unlike *S. chrysella* which grows together with *Porodaedalea chrysoloma* and produces binding hyphae in the subiculum.

*Skeletocutis nivea* (Jungh.) Jean Keller  
**Fig. 19H**

**Specimens examined:** 214D (Szczekotowo Reserve), on *Fraxinus* fallen trunk, 17 Oct. 2014, Karasiński 11008 (D.K.); 252B (H.M.W. M-1530); 340C, on *Fraxinus* fallen branch, 6 July 2009, Karasiński 3276C (D.K.); 345A, on *Corylus avellana* fallen branch, 29 July 2009, Karasiński 3596 (D.K.); 375D (D.K. 10950); 384D (H.M.W. M-1647); 398D (H.M.W. M-1900); 412A (H.M.W. M-1347); 414D (H.M.W. M-2184); 438B (H.M.W. M-1413); 439B (Głęboki Kąt Reserve), on *Fraxinus* fallen twig, 22 March 2002, Wołkowyczy (H.M.W. M-2702); 464D (H.M.W. M-1617); 486D (H.M.W. M-1898); 488C (H.M.W. M-1536).


*Skeletocutis odora* (Sacc.) Ginns  
**Fig. 19A**


Remarks. This species occurs frequently in the study area, mostly on Pinus fallen trunks, but recently observations was also recorded on Pinus, Betula and Populus. It is characterized by having annual, resupinate basidiomata, usually with an undulate hymenial surface, tubes up to 1 cm long, relatively large pores 2–5 per mm, a partly gelatinous context when fresh and a distinct smell similar to young garlic but sweeter. The hyphal ends at dissepiment edges are strongly encrusted and clearly flexuous or even spirally twisted. The size of basidiospores is intermediate for the genus, 4.0–5.5 × 1.2–1.6 μm, and they lack guttules.

Skeletocutis stellae (Pilát) Jean Keller   Fig. 20B

Specimens examined: 130C (D.K. 4121A); 224B (D.K. 3942); 226C, on Picea fallen trunk, 30 July 2009, Karasiński 3682 (D.K.); 253C (D.K. 4089); 254D (D.K. 3813); 257C (D.K. 4338); 285A (D.K. 5307); 316B (D.K. 3789); 316C (D.K. 5259); 319B, on Pinus log, 14 Aug. 2009, Karasiński 3789 (D.K.); 340B (D.K. 4303); 344D (D.K. 3593); 370C (D.K. 3709); 373D (D.K. 4996A); 373D, on Picea big fallen log, 13 July 2009, Karasiński 3447 (D.K.); 374C (D.K. 3546); 374D (D.K. 4161); 375A (D.K. 4276); 399B (D.K. 3298E); 399C (D.K. 5048); 442B (W. Szafer Landscape Reserve), on very rotten fragment of fallen trunk, 23 June 2008, Karasiński 1711 (D.K.).


Remarks. It is characterized by having perennial, often large basidiomata, small pores 7–10 per mm, allantoid basidiospores 3–4 × 0.8–1 μm, the absence of guttules, and moderately winding hyphal ends at dissepiment edges with rather sparse encrustation.

Spongipellis delectans (Peck) Murrill   Fig. 20C


Remarks. Possibly this species is very rare in the study area; we did not not confirm it in recent fieldwork; nor was it found among the specimens preserved in KRAM F-SD and identified by Domański as Spongipellis delectans. One specimen labelled with this name is a sterile basidiome of Trametopsis cervina (Schwein.) Tomšovský
(on *Carpinus*, 20 Oct. 1963, Domański, KRAM F-SD 3442 as *S. delectans*). The second collection (KRAM F-SD 546), reported from BNP as *S. delectans* (Piątek et al. 2004), does not belong to this species either. This specimen was originally identified as *Spongipellis litschaueri* Lohwag, and that is indeed the correct name for this specimen. A specimen collected by Orłoś on 20 September 1957 (see Domański et al. 1973: tab. VIII, 2.) may be *Spongipellis delectans*. Herbarium material is stored in WAM (not studied). Tomšovský (2012) reported *S. delectans*; the basidiome triquetrous in section, context up to 7 cm thick (vs. up to 2 cm thick in *S. litschaueri*).

**Spongipellis delectans**

Specimens examined: BF, on deciduous log (Quercus?), 25 Oct. 1959, Domański (KRAM F-SD 546).

Literature reports: Piątek et al. 2004 (as *Spongipellis delectans*).

Remarks. It seems to be a very rare species in the study area, and was not confirmed during recent fieldwork. The species was earlier synonymized with *Spongipellis delectans*, and under this name the specimen cited above was published by Piątek et al. (2004). Recent molecular studies showed that *Spongipellis litschaueri* is a distinct species (Tomšovský 2012) which, besides its genetic divergence, differs in its ecology and macro morphology from *S. delectans*. It grows almost exclusively on *Quercus* (*S. delectans* predominately on *Fagus*) and has thick basidiomata with a pileal context up to 7 cm thick (vs. up to 2 cm thick in *S. delectans*), the basidiome triquetrous in section, pores with thin dissepiments (thick in *S. delectans*) and basidiospores longer than 7 µm on average (up to 7 µm in *S. delectans*). In the specimen examined (KRAM F-SD 546), basidiospore size was (6.0–)6.2–7.6(–8.0) × (4.6–)4.8–6.2(–6.4) µm.**

**Spongipellis spumeus** (Sowerby) Pat. Fig. 20D


Remarks. This species appears to be very rare in the study area. It differs from *S. litschaueri* and *S. delectans* mostly by having an almost even hymenial surface and smaller, regular pores (larger, irregular, daedaleoid, dentate and lacerate in *S. delectans* and *S. litschaueri*).

**Spongiporus rhodophilus** Spirin & Zmitr. Fig. 20E


Literature reports: Orłoś 1960 (as *Leptoporus undosus*), Domański et al. 1967 (as *Tyromyces undosus*), Szczepkowski et al. 2010 (as *Oligoporus undosus*), Gierczyk et al. 2013 (as *Postia undosa*), Niemelä 2013 (as *Spongiporus undosus*).

Remarks. This species was described as a successor of *Fomitopsis rosea* [= *Rhodofomes roseus* (Alb. & Schwein.) Kotl. & Pouzar] (Spirin et al. 2006). The asterisked specimens grew with or on *F. rosea* dead basidiomata. The other specimens occurred without an evident connection with *F. rosea*. 
**Trametes gibbosa** (Pers.) Fr.  


**Trametes hirsuta** (Wulfen) Pilát

Specimens examined: 214D (D.K. 11000, 11011); 362A, on Carpinus fallen trunk, 24 March 1993, Wolkowyczy (H.M.W. M-1053); 384D (H.M.W. M-1244); 385D (H.M.W. M-2736); 412B (H.M.W. M-0958); 429B (H.M.W. M-1052); 513B (H.M.W. M-1389); 517D (H.M.W. M-2855); 572C, on fallen trunk, 28 Aug. 1990, Wolkowyczy (H.M.W. M-1051); BF, on Carpinus fallen branch, 8 Aug. 1962, Domański (KRAM F-SD 3677); BNP, Poprzeczny Tryb, Carpinus fallen tree, 14 Oct. 2008, Niemelä 8481 (KRA).


**Trametes ochracea** (Pers.) Gilb. & Ryvarden


**Trametes pubescens** (Schumach.) Pilát

Specimens examined: 286B, on Carpinus fallen log, 13 Sept. 2011, Karasiński 6372 (D.K.); BF, on Carpinus branch, 18 Sept. 1960, Domański (KRAM F-SD 1022); BF, on deciduous trunk, 20 Sept. 1960, Domański (KRAM F-SD 949); BF, on deciduous branch, 24 Sept. 1965, Domański (KRAM F-SD 4891).


**Trametes suaveolens** (L.) Fr.


**Trametes versicolor** (L.) Pilát


Literature reports: Błoński et al. 1888 (as *Polyporus versicolor*), Siemaszko 1925 (as *Polyporus...

Trametopsis cervina (Schwein.) Tomšovsky

Fig. 21B

Specimens examined: BF, on deciduous fallen trunk, 28 Aug. 1956, Domański (KRAM F-SD 489 as Trametes cervina); BF, on deciduous fallen trunk, 20 Oct. 1963, Domański (KRAM F-SD 3442 as Spongipellis delectans).


Remarks. It seems to be a very rare species in the BF, not confirmed in recent fieldwork. Only two specimens are preserved in Domański’s collection. Specimen KRAM F-SD 489 is fertile but in poor condition, and almost completely damaged by insects. The second specimen (KRAM F-SD 3442), misidentified by Domański as Spongipellis delectans, is sterile. It has a dimitic hyphal structure, which excludes Spongipellis. Based on a comparison with other specimens of Trametopsis cervina it was assigned to this species. Niemelä (2013) reported this species based on literature data (after Domański et al. 1973).

Trechispora candidissima (Schwein.) Bondartsev & Singer


Literature reports: Domański 1967 (as Crisella candidissima), Niemelä 2013.

Remarks. This is a rare species which differs from closely related species mostly by having small rod-like crystals covering subicular hyphae.

Trechispora hymenocystis (Berk. & Broome) K. H. Larss.

Fig. 21C

Specimens examined: 500 (in the vicinity of Podolany Reserve), on bark of Picea fallen trunk, 27 Sept. 2006, Karasiński 1635 & Piętek (KRAM F-47254); BNP, Poprzeczny Tryb, east of ‘Mogilki’ graves, on Picea thick trunk, 9 Sept. 2009, Niemelä 8573 (KRA).


Remarks. This species differs from other roid species of Trechispora P. Karst. mostly by having sphaerocysts on subicular hyphae.

Trechispora mollusca (Pers.) Liberta

Fig. 21D


Literature reports: Domański 1967 (as Cristella mollusca), Niemelä 2013, Gierczyk et al. 2014.

Trichaptum abietinum (Dicks.) Ryvarden

Fig. 21E


Literature reports: Błoński et al. 1888 (as Polyporus abietinus), Błoński 1889a (as Polyporus abietinus), Siemaszko 1923 (as Polyporus abietinus), Pilat 1950 (as Trametes abietina), Orłoś 1960, 1961 (as Trametes abietina), Domański 1967, Anonymous 1968 (as Hirschioporus abietinus), Bujakiewicz et al.


**Trichaptum fuscoviolaceum** (Ehrenb.) Ryvarden

Specimens examined: **385C**, on *Picea* fallen trunk, 21 March 1991, Wołkowycki (H.M.W. M-1119); **437D** (H.M.W. M-1330); **460C** (H.M.W. M-1235); **600B** (H.M.W. M-1104); **BF**, on *Picea* fallen trunk, 19 Sept. 1960, Domański (KRAM F-SD 883).


**Tyromyces chioneus** (Fr.) P. Karst.


**Records with uncertain status**

**Albatrellus confluens** (Fr.) Kotl. & Pouzar

Literature reports: Błoński et al. 1888 (as *Polyporus politus*), Domański et al. 1973 (cited specimen reported by Błoński et al. 1888).

Remarks. Except for the first report, no additional specimens of the species have ever been published from the study area. This species was not confirmed by recent observations.

**Amylopora sordida** (Ryvarden & Gilb.) Vampola & Pouzar

Literature reports: David & Tortić 1984.

Remarks. This species was not confirmed by recent observations. According to Vampola and Pouzar (1992) the specimen reported from the BNP by David and Tortić (1984) belongs to *Amylopora sitchensis*.

**Antrodia ramentacea** (Berk. & Broome) Donk

Literature reports: Domański 1969a, Domański 1972b (as *Coriolellus ramentaceus*), Niemelä 2013.

Remarks. The specimens cited by Domański (1969a, 1972b) were not found in KRAM F-SD. Niemelä (2013) reported this species from the BF based on literature data (after Domański 1969a). The occurrence of this species in the BF has not been confirmed by recent observations.

**Antrodia vaillantii** (DC.) Ryvarden

Literature reports: Błoński 1889a (as *Polyporus Vaillantii*).

Remarks. Herbarium material is probably lost. The occurrence of the species in the BF was not confirmed by recent studies.

**Ceriporia reticulata** (Hoffm.) Domański


Remarks. This species is quite common on...
dead hardwoods in Poland (Wojewoda 2003) but it seems to be very rare in the BF and was not confirmed by recent fieldwork. The specimens cited by Domański have not been found in KRAM F-SD. Niemelä (2013) reported this species based on literature data (after Domański 1967).

**Ceriporiopsis gilvescens** (Bres.) Domański


**Remarks.** None of the several specimens of *Ceriporiopsis gilvescens* stored in KRAM F-SD were collected in the study area. Niemelä (2013) reported this species from the BF based on literature data (after Domański 1971). The occurrence of this species in the BF was not confirmed during recent fieldwork.

**Daedaleopsis tricolor** (Bull.) Bondartsev & Singer


**Remarks.** The specimen cited by Wojewoda (2002, KRAM F-SD 861) represents *Daedaleopsis confragosa*, with a small basidome and slightly reddened pileus surface.

**Dichomitus squalens** (P. Karst.) Reid

*Literature reports:* Domański 1965 (as Coriollellus squalens), Domański 1972b, Niemelä 2013.

**Remarks.** This species was not confirmed by recent observations. The only specimen in Domański’s collection, labelled *Coriollellus squalens* collected in Białowieża (on pine planks on a railway bridge in Białowieża, 20 Oct. 1955, Domański, KRAM F-SD 273), does not belong to this species. The herbarium envelope contains a specimen having an effused-reflexed basidome ca 10 × 4 cm in outline, with a widely effused resupinate part and an elongate, narrow pileus with a hirsute surface, circular pores 3–4 per mm with thick disseciments, a trimitic hyphal structure with clamped generative hyphae 3–7 μm, skeletal hyphae 4–6 μm wide, binding hyphae 2–4 μm wide, basidia ca 20 × 5 μm, and basidiospores 6–7 × 2–2.5 μm, cylindrical, slightly curved, hyaline, thin-walled and non-amylloid. This set of characters exclude *Dichomitus squalens*, especially due to the distinctly hirsute pileus, size and shape of basidiospores, and lack of dichotomously branched binding hyphae, but correct assignment to species is not possible. This indicates that the literature reports (Domański 1965, 1972b) are based on a misidentified specimen. Niemelä (2013) reported the species based on literature data (after Domański 1972b).

**Fuscoporia contigua** (Pers.) G. Cunn.

*Literature reports:* Błoński 1889a (as Ochroporus contiguus).

**Remarks.** It was not found during recent fieldwork. The species seems to be very rare in the study area, or absent.

**Ganoderma adspersum** (Schulzer) Donk


**Remarks.** According to Domański et al. (1973) ‘(...) this fungus has been observed in Białowieża’, but it was not confirmed during recent studies. Niemelä (2013) reported it from the BF based on literature data (after Domański et al. 1973).

**Gloeophyllum trabeum** (Pers.) Murrill

*Literature reports:* Błoński et al. 1888 (as Polyporus trabeus).

**Remarks.** Except for the literature report (Błoński et al. 1888) it was never published from the study area, and was not confirmed by recent observations.

**Oligoporus rennyi** (Berk. & Broome) Donk

*Literature reports:* Domański 1972b (as Strangulidium rennyi), Niemelä 2013.

**Remarks.** Herbarium material for the literature report (Domański 1972b) has not been found in KRAM F-SD, and the species was not found during recent fieldwork. Niemelä (2013) reported the species based on literature data (after Domański 1972b).

**Phellinus lundellii** Niemelä

Remarks. It was not confirmed in recent studies. Herbarium material for the literature record from the BF (Domański et al. 1973) was not found among the specimens deposited in KRAM F-SD. Niemelä (2013) reported the species based on literature data (after Domański et al. 1973).

*Skeletocutis subincarnata* (Peck) Jean Keller

Literature reports: Domański 1972b (as *Incrustotoporia subincarnata*).

Remarks. It was not confirmed in recent fieldwork. The specimens preserved in KRAM F-SD under this name belong to *Skeletocutis biguttulata* (Piątek & Cabała 2005).

Conclusions

The Białowieża Forest, and especially the area protected in Białowieża National Park, is a refuge for many endangered, rare and interesting organisms, especially wood-inhabiting fungi. Polypore species richness is very high there. Many relict fungal species of old-growth forest occur in the BF and have relatively large populations. The current knowledge of the poroid fungi in the Polish part of BF has been summarized here based on our examination of 1600 specimens and an analysis of about 100 published reports. In total, 210 species representing 80 genera are listed in this paper. *Postia, Skeletocutis, Polyporus, Phellinus, Antrodia* and *Antrodiella* are genera represented by the largest number of species. Fourteen species previously reported in the literature have uncertain status as polypores of the BF because they lack corresponding voucher specimens and were not confirmed in recent field studies. Another fourteen species are newly reported for the Białowieża Forest (mainly from Białowieża National Park), including 8 species reported for the first time from Poland: *Antrodia hyalina*, *A. infirma*, *Antrodiella subradulata*, *Junghuhnia fimbriatella*, *Postia foliiculocystidiata*, *P. minusculoides*, *Skeletocutis chrysella* and *S. papyracea*. Several very rare European polypores already reported from the Białowieża Forest in the 20th century, such as *Antrodia albobrunnea*, *Antrodiella foliaceodentata*, *Buglossoporus pulvinus*, *Dichomitus albidofuscus* and *Gelatoporia subvermispora*, were found at new localities, confirming their continuous occurrence in this forest. *Antrodiella subradula*, previously known from Asia, is reported for the first time from Europe.

The polypore diversity of the Polish part of the Białowieża Biosphere Reserve is unique, and much higher than in other European forests studied for their polypore biodiversity. A total of 394 polyporoid species are known from Europe (Ryvarden & Melo 2014), and the half of them occur in the BF. About 235 poroid species have been noted from Poland so far; the vast majority of them occur in the BF, among them many species not reported from other areas of Poland. The only species not present in the BF are those strictly associated with mountain forests or mountain trees such as *Abies alba* and *Fagus sylvatica*, which are absent from the BF. As compared with the reports of polypore species from other Polish national parks, the BNP area seems to be a true polypore diversity hotspot. The Polish national park next-best investigated in terms of fungal diversity, Kampinos National Park (Kampinos Biosphere Reserve), hosts only 129 poroid species (Karasiński et al. 2015).

An analysis of the factors affecting such high diversity of poroid fungi in the BF is beyond the scope of this study. In general, however, we suggest that the polypore species richness of this area reflects the degree of naturalness of forest ecosystem processes there, with continuous availability of dead wood lying on the forest floor. Białowieża National Park in particular has a long history of continuity of forest growth in natural conditions. It was never extensively used by humans in the past. The absence of management over the centuries has ensured the continuous availability of a large amount of woody debris of different sizes and decay stages since the end of the last glaciation, serving as substrates for many relict, rare and endangered poroid fungi not found in most European forests.

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