ACTA MYCOLOGICA
Vol. 35 (2): 197–216
2000

Rare, threatened and new for Poland macromycetes found in Bukowiec reserve (W Carpathians)

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Miśkiewicz A.: *Rare, threatened and new for Poland macromycetes found in Bukowiec reserve (W Carpathians)*. Acta Mycol. 35 (2): 197–216, 2000.

In the paper 36 rare or threatened, 6 new for Poland and 24 new for Polish Carpathians taxa of macrofungi are presented. They were found during two-years investigations carried out in Bukowiec reserve (Pogórze Wiśnickie region, W Carpathians, S Poland).

Key words: *Ascomycota, Basidiomycota, Catinella, Phaeohelotium, Trichophaea, Lasiosphaeria, Agaricus, Inocybe*, Bukowiec reserve, W Carpathians, S Poland.

INTRODUCTION

Studies on macrofungi were carried out in 1997 and 1998 in Bukowiec reserve. It is situated 15 km south from Brzesko, between Lipnica Dolna, Iwkowa and Tymowa (20°35'30" E, 49°50'20" N) in Pogórze Wiśnickie region, External Western Carpathians (S Poland) (Fig. 1). It was founded in 1959 in order to preserve flowering specimens of *Hedera helix* (Medwecka-Kornaś and Myczkowski 1957). The area of investigation (5.31 ha) is covered by the *Dentario-glandulosae Fagetum* and partly by *Circaeo-Alnetum* and *Querco-Fagetum* associations.

The research indicated that the area of Bukowiec reserve is very interesting from the point of view of the diversity of fungi (Miśkiewicz mscr.). The complete list of taxa found in this area is given by this author. This paper presents rare, threatened and new for Poland species of macromycetes.

Acknowledgements: I wish to extend my sincere thanks to Prof. B. Gumińska for her great help and advice during my research and confirming the identification of fungi. My thanks are due to Prof. W. Wojewoda for confirming the identification of *Cyphellostereum laeve* and critical reading of the manuscript. I am also grateful to Dr A. Chlebicki for confirming the identification of *Lasiosphaeria* cfr. *canescens*. Finally, I express thanks for Dr M. Mierzeńska for identification of mosses and for Prof. K. Turnau's help in preparing the ilustrations for the paper.

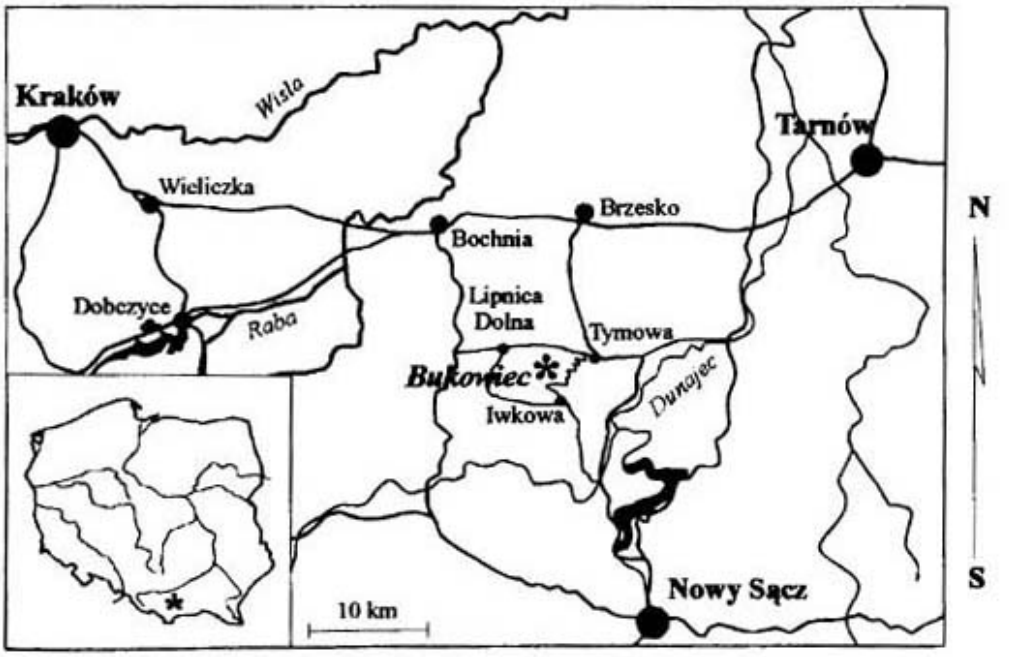


Fig. 1. Localization of the Bukowiec reserve

RESULTS

In Bukowiec reserve, the presence of 6 taxa new for Poland (4 – *Ascomycota* and 2 – *Basidiomycota*) and 24 taxa new for Polish Carpathians is reported. All of them, with the exception of *Phaeohelotium subcarneum*, which occurred several times, were encountered once or rarely. Furthermore, 26 taxa of collected fungi were found in less than 10 sites in the country up till now and 17 are included in the red list of threatened organisms (Wojewoda and Ławrynowicz 1992). The most interesting fungi, also rare in Europe are: *Agaricus niveolutescens*, *Ascotremella faginea*, *Catinella olivacea*, *Cyphellostereum laeve*, *Hydropus atramentosus* and *Psathyrella impexa*.

The taxonomy is based on Hawksworth et al. (1995) and nomenclature on Hansen and Knudsen (1992) and Breitenbach and Kränzlin (1984). Species within the orders are arranged alphabetically, as are the orders within the phyla. The distribution of species in Poland is besed on the data base gathered by Prof. B. Gumińska, Institute of Botany, Jagiellonian University.

Abbreviations and symbols used: * – species new for Polish Carpathians; category of the red list (Wojewoda and Ławrynowicz 1992): **Ex** – extinct species and probably extinct, **E** – endangered species, **R** – rare, **V** – vulnerable, **I** – indeterminate.

SPECIES NEW FOR POLAND

ASCOMYCOTA

Leotiales

Catinella olivacea (Batsch) Boud.
[Syn.: *Peziza olivacea* Batsch]

Apothecia sessile saucer-shaped, up to 1.5 cm in diameter, dark olive-green with olive-ochraceous margin. The surface smooth, shining, margin incurved. Excipulum – textura globulosa/angularis (Pl. I. A). Paraphyses thin, slightly swollen (up to 4–5 μm), covered with an amorphous yellow-brown matter at the tip (Fig. 2). Asci cylindric, 6–7 μm, tips not amyloid. Spores uniseriate, cylindric, sometimes slightly constricted in the middle, 10–12 × 4–5 μm, with two oil drops (Fig. 3).

The species was found for the first time (7 Sept. 1997) on wood remnants. Then (14 Sept. 1997) it occurred on beech log accompanied by the other fungi and slime moulds.

Distribution in Europe: e.g. British Isles – quite common (Dennis 1978); Switzerland – rare (Breitenbach and Kränzlin 1984); Germany – very rare, two sites (Richter et al. 1996).

Phaeohelotium subcarneum (Schum.) Dennis
[Syn.: *Helotium subcarneum* Schum.,
Orbiliopsis subcarnea (Schum.) v. Höhnel]

Apothecia nearly sessile or with a short stipe, saucer-shaped, about 0.5 cm in diameter, cream-coloured. Excipulum – textura globulosa/angularis. Paraphyses cylindric, 95 × 3–3.5 μm, slightly swollen at the tip. Asci cylindric, 80–90 × 6–7 μm, pore blued by iodine (Fig. 4). Spores irregulary biseriate or uniseriate, long-elliptical, 12–15 × 3.5–5 μm (Fig. 5).

Spores of the species are biseriate (Dennis 1978) or uniseriate (Breitenbach and Kränzlin 1984).

This species is probably connected to moist and wet conditions. It always occurred near streams, on twigs or wood debris submersed in water. In Bukowiec reserve it was a common species (31 Aug. 1997 and 23 May, 10 and 24 June, 12 and 28 July, 1 Sept.1998) and it was found in beech and alder forest as well.

Distribution in Europe: e.g. British Isles – not common (Dennis 1978), Switzerland – not common (Breitenbach and Kränzlin 1984).

Pezizales

Trichophaea gregaria (Rehm) Boud. **var.** ***intermedia*** Le Gal
[Syn.: *Humaria gregaria* Rehm, *Lachnea gregaria* (Rehm) Phill. f. *pseudogregaria*, *L. pseudogregaria* Rehm, *L. terrestris* Vel., *L. vernalis* Vel.]

Apothecia sessile, saucer-shaped, 0.5 cm in diameter, whitish-greish, outer surface covered with short, rigid, brown hairs (Pl. I. B). Hairs thickwalled, septate, forked at the base, $150-250 \times 10-24$ μm (Fig. 6). Paraphyses cylindric, septate, swollen at the tip up to 7 μm. Asci cylindric, 13 μm in diameter, tips not amyloid. Spores elliptic, warted, $22-24 \times 12-14$ μm, with one or two oil drops (Fig. 7). The variety *intermedia* differs from *Trichophaea gregaria* by warted spores.

The species developed on decaying wood, on 6 Mar. 1999. *Trichophaea gregaria* is known from several localities in Poland. The variety *intermedia* has not been recorded in the country till now.

Sites in Poland (concerns *Trichophaea gregaria*): As *Lachnea gregaria*: near Międzyrzec (Eichler 1904), several sites in Silesia (Schroeter 1908) and in the vicinity of Dobczyce (Rouppert 1912). As *Trichophaea gregaria* it was announced by Bujakiewicz (1979) from burnt places, on Babia Góra Massif, in Białowieża National Park (Skirgiełło et al. 1992) and from Walim near Legnica, where it occured on soil and wood (Gminder 1993).

Distribution in Europe: (concerns mainly *Trichophaea gregaria*, there is almost no information about the distribution of the variety *intermedia*.) e.g. Switzerland – not spread (Breitenbach and Kränzlin 1984), Czech Republic (Svrček and Kubička 1968), Germany, Ukraine, Estonia, Sweden (Lundqvist and Moberg 1977), Norway (Schumacher 1979).

Sordariales

Lasiosphaeria **cfr.** ***canescens*** (Pers.: Fr.) Karst.

Perythecia ovoid, bulbous, 0.5 mm in diameter, black, covered with rigid, septate, pointed brown setae, with thick walls (Pl. I. C., Fig. 8). Asci cylindric, $11-14$ μm in diameter, tips not amyloid (Fig. 9). Spores biseriate, $35-40 \times 4-5$ μm, curved, boomerang-shaped, tapering at one end (Fig. 10).

Specimens were found on a piece of wood with *Orbilia xanthostigma* (14 Sept. 1997).

Distribution in Europe: e.g. British Isles – quite common (Dennis 1978).

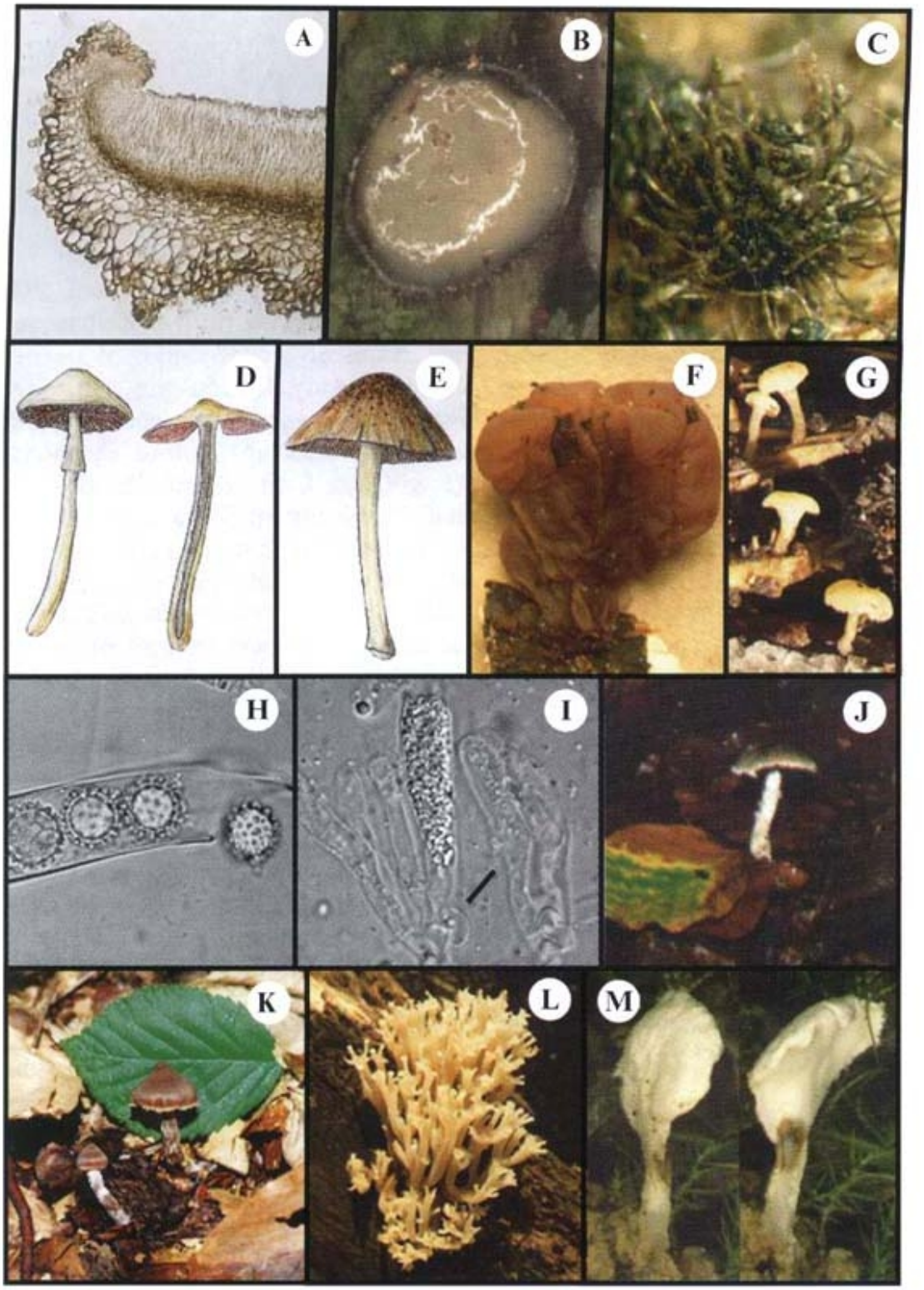


Plate I. A. *Catinella olivacea* – section through apothecium, B. *Trichophaea gregaria* var. *intermedia* – apothecia, C. *Lasiosphaeria* cfr. *canescens* – perythecium, D. *Agaricus niveolutescens* – carpophores, E. *Inocybe margaritispora* – carpophore, F. *Ascotremella faginea* – carpophore, G. *Cudoniella clavus* – apothecia, H. *Scutellinia armatospora* – spores, I. *Armillaria ostoyae* – basidium with clamp, J. *Psathyrella impexa* – carpophore, K. *Cortinarius incisus* – carpophores, L. *Clavicorona pyxidata* – carpophore, M. *Cyphellostereum laeve* – carpophore

BASIDIOMYCOTA

Agaricales

**Agaricus niveolutescens* Huijsm.

Cap about 2 cm in diameter, bell-shaped with broad umbo, silky white (Pl. I. D). Quickly staining yellow to copper-yellow on touching. Margin appendiculate with velum remnants. Stipe 5 × 0.5 cm, tubular, discolouring yellow to copper-yellow on touch. Ring delicate, pendulous, slightly striate. Gills free, grey-pink-lila, broad, crowded. Flesh thin, becoming yellow then copper-yellow on cutting, strong smell and taste of mandel. Spore print chocolate brown. Cheilocystidia cylindric, 8–10 μm in diameter. Spores broadly elliptical 5–6 × 3 μm (Fig. 11).

Agaricus niveolutescens is well characterised by a silky-fibrillose cap pure white at first and staining yellow on touching (H u i j s m a n 1960). These features distinguish the species from the others belonging to section *Minores* Fries. This author also points out that this species can be easily mistaken for the white form of *Inocybe geophylla* in the field. M o s e r (1983) separates this species by the smell of mandel. B o n (1985) defines the smell as benzene-aniseed and points out that the species occurs under beeches or horse-chestnut. According to C a p p e l l i (1984) this is a "good species", having clearly distinguishing features. This author collected it also in a beech forest.

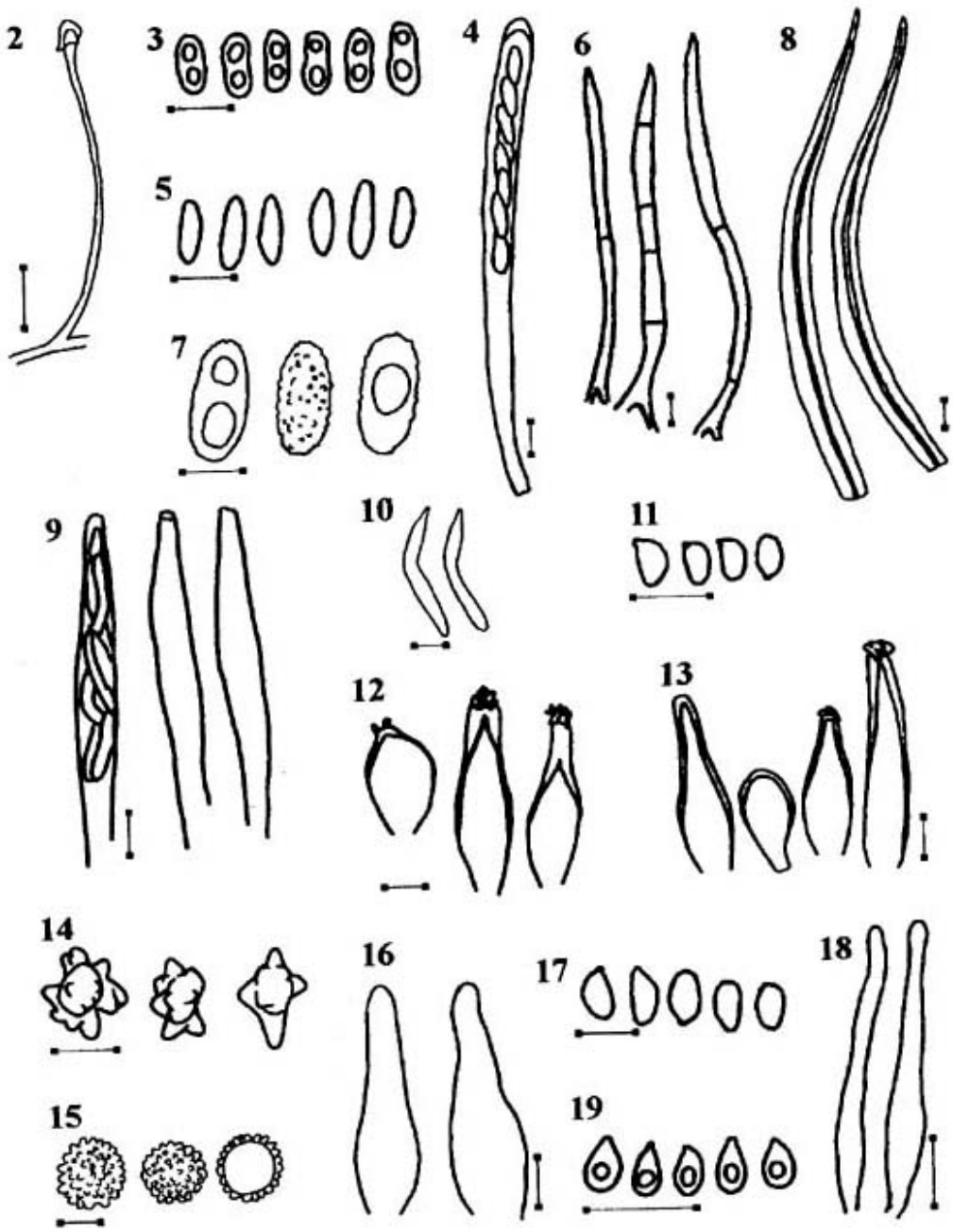
Two fruitbodies of this species occurred in the Bukowiec reserve growing on soil, in the beech forest, on 12 Oct. 1998. Two similar specimens were also found in beech forest a year before (28 Sept. 1997). Their macroscopic and microscopic features are identical with specimens of *Agaricus niveolutescens*, but the smell was not distinctly of mandel. However, it is very probable that those individuals also belong to this species, which can be common in the reserve.

Distribution in Europe: e.g.: France (H u i j s m a n 1960), West Germany – scattered localities (K r i e g l s t e i n e r 1991), Norway, Denmark – rare (H a n s e n and K n u d s e n 1992).

Cortinariales

**Inocybe margaritispora* (Berk.) Sacc.

Cap about 4 cm in diameter, fibrillous-scaly, beige (Pl. I. E). Scales darker and more numerous in the center of the cap. Stipe 5 × 0.7 cm pruinose in its upper part. The base of stipe slightly swollen, light beige. Gills uncinate, distant, edges ciliate. Flesh cream-coloured, no smell or taste. Cheilocystidia and pleurocystidia crested, lageniform, 15–17 μm in diameter, caulocystidia similar, 12–18 μm in diameter (Fig. 12, 13). Spores covered with obtuse nodules, 10–12 × 7–8 μm (Fig. 14).



Figs 2–19. Fig. 2. *Catinella olivacea* – paraphysis, Fig. 3. *Catinella olivacea* – spores, Fig. 4. *Phaeohelotium subcarneum* – ascus, Fig. 5. *Phaeohelotium subcarneum* – spores, Fig. 6. *Trichophaea gregaria* var. *intermedia* – hairs, Fig. 7. *Trichophaea gregaria* var. *intermedia* – spores, Fig. 8. *Lasiosphaeria* cfr. *canescens* – hairs, Fig. 9. *Lasiosphaeria* cfr. *canescens* – asci, Fig. 10. *Lasiosphaeria* cfr. *canescens* – spores, Fig. 11. *Agaricus niveolutescens* – spores, Fig. 12. *Inocybe margaritispora* – cheilocystidia, Fig. 13. *Inocybe margaritispora* – caulocystidia, Fig. 14. *Inocybe margaritispora* – spores, Fig. 15. *Scutellinia armatospora* – spores, Fig. 16. *Psathyrella impexa* – cheilocystidia, Fig. 17. *Psathyrella impexa* – spores, Fig. 18. *Cyphellostereum laeve* – cystidia, Fig. 19. *Cyphellostereum laeve* – spores; bare – 10 μm

Stangl (1989) suggests, that *Inocybe margaritispora* is identical with *I. phaeosticta* Furrer and treats this name as the synonim of the species. According to Moser (1983) and Nespiak (1990) *Inocybe phaeosticta* lacks scales on the cap surface and occurs near coniferous trees what makes this species different from *I. margaritispora*.

Only one specimen was found on 7 Sept. 1997 in the beech forest. Further investigation in the reserve should be undertaken to confirm the presence of the species in this area.

Distribution in Europe: e.g. West Germany – not rare (Krieglsteiner 1991), Sweden, Denmark – rare (Hansen and Knudsen 1992).

RARE AND THREATENED SPECIES

ASCOMYCOTA

Leotiales

***Ascotremella faginea** (Peck.) Seaver (Pl. I. F)
[Syn.: *Haematomyces eximius* Ricken, *H. fagineus* Peck., *Neobulgaria faginea* (Peck.) Raitviir]

Three specimens were found on beech twigs, in the beech forest, on 28 July 1998.

Sites in Poland: – V, Białowieża Primeval Forest (Gumińska and Wojewoda 1985).

Cudoniella clavus (A. et S.: Fr.) Dennis (Pl. I. G)
[Syn.: *C. aquatica* (Libb.) Sacc., *Helotium clavus* (A. et S.) Gill.]

The species was found in the alder forest, on plant debris immersed in water, on 23 May 1998.

Sites in Poland: as *C. aquatica*: Czerwińsk (Schroeter 1908), As *Helotium clavus*: Świętokrzyski National Park (Lisiewska 1979) and on twigs lying in mud in a mire of Stare Wierchy Massif (Turnau 1983). As *Cudoniella clavus*: in subalpine zone of Babia Góra Massif (Bujakiewicz 1993). Dennis (1978) mentions that this species is often mistakenly called *Ombrophila clavus*. Under this name it was recorded from the vicinity of Międzyrzec (Eichler 1902, 1904), in Wrocław and Wałbrzych (Schroeter 1908).

Hyaloscypha hyalina (Pers.) Boud.

The species was found a few times in the alder forest (10 May, 10 June, 28 July 1998) and once in the beech forest, too (26 Oct. 1998).

Sites in Poland: Jezioro Brzeziczno reserve, Durne Bagno reserve, Łęczyńsko-Włodawskie Lake District (Chmiel 1985, 1988) and Białowieża Primeval Forest (Skirgiełło et al. 1992).

Polydesmia pruinosa (Berk. et Br.) Boud.
[Syn.: *Belonidium pruinosum* (Berk. et Br.) Rehm, *Belonium pruinosum* (Berk. et Br.) v. Höhnel, *Helotium pruinosum* Berk. et Br., *Pseudohelotium jerdonii* Sacc.]

In Bukowiec reserve the species occurred a few times within beech forest (1 and 27 July, and 26 Oct. 1998). It developed on beech branches and stromata of *Hypoxylon fragiforme*.

Sites in Poland: Borecka Forest, Mazury Lake District (Ginko 1986).

Pezizales

Helvella sulcata Afz.: Fr.

Two individuals of the species were found on 18 Oct. 1997, on bare, wet soil, near a stream.

The species is sometimes treated as the synonim of *Helvella lacunosa* Afz.: Fr. (Dissing 1966). Weber (1972), however, divides those species according to apothecium shape, which is regularly saddle-shaped or lobate with a distinct sinus in case of *Helvella sulcata* Afz.: Fr. and mitrate, irregularly saddle-shaped or lobed in case of *Helvella lacunosa* Afz.: Fr.

Sites in Poland: the vicinity of Kwidzyn (Neuhoff 1925), the vicinity of Pniewy (Bujakiewicz 1964), Zastocz near Annopol (Sałata 1968), Dębowiec reserve, central Poland (Ławrynowicz 1973), Babsk reserve near Skierniewice (Mamos 1986).

Pachyella babingtonii (Berk.) Boud.
[Syn.: *Humaria oocardii* (Kachlbr.) Sacc., *Pachyella depressa* (Phill.) Boud., *Psilopezia babingtonii* (Berk.) Berk., *P. myrothecioides* Berk. et Broome]

The species was found a few times (31 Aug., 14 Sept. and 18 Oct. 1997) on twigs submersed in water, accompanied by *Scutellinia scutellata*.

Sites in Poland: Turbacz and Stare Wierchy Massif (Gorce Range), on burns and wet sites near *Scutellinia scutellata* (Turnau 1983, 1984).

Scutellinia armatospora Denison (Pl. I. H, Fig. 15)
[Syn.: *S. asperior* (Nyl.) Dennis, *S. diaboli* (Vel.) Le Gal, *S.* (*Ciliaria, Sphaeospora*) *trechispora* (Berk. et Br.) ss. Le Gal]

The identification of *Scutellinia armatospora* Denison was based on Breitenbach and Kränzlin (1984). Dennis (1955) mentions the species as *Scutellinia asperior* and lists it among taxa characterized by rounded, warted spores. This author distinguishes it from *S. trechiospora* on the basis of considerably bigger warts. *S. armatospora* was described by Denison (1959), who points out that the species occurs on ground and has big, conical warts covering the spores. He gives an illustration of the spores on the picture. On the other hand, Le Gal (1971) suggests that the size of warts is a very variable feature so there are no reasons to separate *S. armatospora* from *S. trechiospora.* In her opinion *S. armatospora* is a synonim of *S. trechiospora.*

The fungus was found in alder forest, on 28 Sept. 1997 and 12 July. 1998.

Sites in Poland (all sites are recorded under the name of *S. asperior*): Dąbrowa near Lublin, Brody near Szczebrzeszyn (Sałata and Bednarczyk 1977), Babia Góra Massif (Bujakiewicz 1979). *S. trechiospora* is a common species in Poland.

Scutellinia umbrarum (Fr.) Lambotte
[According to Breitenbach and Kränzlin (1984) it is also mistakenly called *Scutellinia umbrorum*]

The species was encountered within alder forest on 21 June 1997. Next year it occurred also in beech forest a few times (3 Aug., 1, 8, 22 Sept., 12, 26 Oct. and 6 Nov. 1998).

Sites in Poland: as *S. umbrorum*: Pieniny Mts. (Gumińska 1972) and Kazimierz Landscape Park (Chmiel 1991).

Sordariales

Lasiosphaeria ovina (Fr.) Ces. et de Not.
[Syn.: ?*Leptospora ovina* (Pers.) Fuck.]

The specimens occurred several times (1, 28 July and 1 Sept. 1998), in various places, on wood.

Sites in Poland: the vicinity of Międzyrzec (Bresadola 1903), Bieszczady Mts. (Domański et al. 1963, 1967), Białowieża National Park (Truszkowska 1965, Truszkowska et al. 1966, Skirgiełło 1998), Pieniny Mts. (Gumińska 1990). As *Leptospora ovina*: the vicinity of Międzyrzec (Eichler 1904) and Rabka (Wodziczko 1911).

BASIDIOMYCOTA

Agaricales

Amanita citrina* var. *alba (Gill.) Gilb.

Only one young specimen was found on 21 Sept. 1997. It was identified as a white variety according to Phillips (1981).

Sites in Poland: Wolin National Park (Lisiewska 1966), Kamień near Mikołajki (Anonymous 1968), Sokole Góry reserve near Częstochowa (Adamczyk 1996).

Armillaria ostoyae (Romagn.) Herink
[Syn.: *A. obscura* (Schaeff.) Herink, *A. polymyces* (Pers.: S. F. Gray) Sing. et Clç.]

The species was identified on the basis of the dark ring margin, bulbous basal part of stipe, the presence of clamp connection in basidium (Pl. I. I) and lack of clamps in hypha. Those features are recognized as characteristic for this species by Intini (1990).

A. ostoyae was found in Bukowiec reserve several times (18 and 27 Oct., 14 Nov. 1997). Additionally, a big amount of black, flattened rhizomorphs, belonging probably to this species was present in whole area of investigation. They covered logs of birches, oaks, alders and beeches.

Sites in Poland: the first locality is reported by (Guillaumin et al. 1993) without detailed information. The species was also found in Sękocin (Żółciak 1991) and near Częstochowa, in Parkowe and Sokole Góry reserves (Adamczyk 1996). *A. ostoyae* is probably a common species in beech forests in Poland. It belongs to *A. mellea* complex and there are surely many localities in Poland recorded under this name.

Conocybe pseudopilosella (Kühner) ex Kühner et Watl.
[Syn.: *C. pubescens* var. *pseudopilosella* Kühner,
C. pseudopilosella (Kühner) Kühner et Romagn.]

A few individuals grew (8 and 29 Sept. 1998) on the ground close to a decaying log.

Sites in Poland: Rzędy, Czerwone Wierchy Massif, Western Tatras (Nespiak 1960) – under *Pinus mugho*, about 1650 m a.s.l.

Entoloma euchroum (Pers.: Fr.) Donk
[Syn.: *Leptonia euchroa* (Pers.: Fr.) Kumm.,
Rhodophyllus euchrous (Pers.: Fr.) Quél.]

The species occurred a few times (14 Sept. 1997 and 8, 22 Sept. 1998) always on alder trunks in alder forest.

Sites in Poland: – I. More than ten localities are known from Poland, mainly in lowland.

Entoloma juncinum (Kühner et Romagn.) Noordel.
[Syn.: *E. junceus* ss. Lge., *Rhodophyllus junceus* (Fr.) Quél.]

The species was found three times: 18 Oct. 1997, 12 July and 22 Sept. 1998.
Sites in Poland: – I. In Poland it occurs mainly in lowlands.

****Hemimycena candida*** (Bres.) Sing.
[Syn.: *Delicatula candida* Bres., *Marasmiellus candidus* (Bres.) Sing., *Mycena candida* Bres., *Omphalina candida* Bres.]

H. candida was found (31 Aug. 1997) on plant debris submerged in water.
Sites in Poland: the Botanical Garden in Kraków (W o j e w o d a 1967), alder forests of Wielkopolska province (B u j a k i e w i c z 1975) and Dulowska Forest (W o j e w o d a 1979). The species is connected with swamp plants, mainly *Symphytum officinale*, and it grows on their roots.

Hemimycena cyphelloides **(Orton) Maas G.**
[Syn.: *H. pseudocrispula* (Kühner) Sing., *Mycena pseudocrispula* Kühner]

A few individuals were found (28 July 1998) in the alder forest on plant debris submersed in water.
Sites in Poland: Pieniny Mts. (G u m i ń s k a 1976), subalpine zone of Babia Góra Massif (B u j a k i e w i c z 1993).

****Hydropus atramentosus*** (Kalchbr.) Kotl. et Pouz.
[Syn.: *Collybia fuliginaria* Batsch: Fr. ss. Bres., *H. nigrita* (Berk. et Curt.) Sing., *Mycena fuliginaria* (Weinm) v. Höhnel]

Several specimens occurred on decaying log covered with mosses (28 July 1998).
Sites in Poland: – E. Ojców National Park (A n o n y m o u s 1968 – as *H. fuliginarius*, W o j e w o d a 1974), Central Roztocze (S a ł a t a 1972), Kozienice Forest (S a ł a t a 1977), Świętokrzyski National Park (L i s i e w s k a 1979), the planned Łęka reserve (F l i s i ń s k a and S a ł a t a 1998), Magura National Park (W o j e w o d a 1999).
Distribution: Europe: rare; e.g. West Germany – two sites (K r i e g l s t e i n e r 1991), Czech Republic and Slovakia – several localities, mainly in the mountains (K o t l a b a and P o u z a r 1962), Switzerland – rare, North America (B r e i t e n b a c h and K r ä n z l i n 1991).

Hypholoma subviride (Berk. et Curt.) Dennis

It was separated from *H. fasciculare* (Huds.: Fr.) Kummer by Dennis (1961) on the base of much smaller size of fruitbody and the presence in the subtropical zone. Furthermore, Pegler (1977) mentions that *H. subviride* has smaller spores. The species was found (14 and 21 Sept. 1997) on decaying log, in abundance.

Sites in Poland: Białowieża Primeval Forest and Augustów Primeval Forest – abundantly (Pouzar 1981; Skirgiełło et al. 1992, Skirgiełło 1998), Olsztyn district (Olesiński and Wojewoda 1987), Jegiel reserve (Domański Z. 1993), Pieniny National Park (Gumińska 1994), Kraków (Wojewoda 1996), Kielce (Łuszczyński 1997), and Niepołomice Forest (Wojewoda et al. 1999).

****Mycena abramsii*** (Murr.) Murr.
[Syn.: *M praecox* Vel.]

The species was found once (21 Sept. 1997).

Sites in Poland: – **R**. Wielkopolska province (Lisiewska 1965), Wolin National Park (Lisiewska 1966), Roztocze National Park (Sałata 1972), Nowa Wieś reserve, central Poland (Ławrynowicz 1973), Jata reserve, Siedlce district (Sałata 1978), Białowieża Primeval Forest (Skirgiełło 1998), Niepołomice Forest (Wojewoda et al. 1999).

Mycena purpureofusca (Peck) Sacc.
[Syn.: *M. janthina* ss. Ricken, *M. atromarginata* (Lasch) Kumm.]

One carpophore was found on a fir log, on 26 Oct. 1998.

Sites in Poland: – **V**. The species is known from more than ten scattered sites in Poland.

**Omphalina strombodes* (Berk. et Mont.) Murr.
[Syn.: *Chrysomphalina strombodes* (Berk. et Mont.) Clç., *Clitocybe xanthophylla* Bres., *Gerronema strombodes* (Berk. et Mont.) Sing., *Omphalia bresadolae* Mre., *O. hypoxantha* Bres.]

The species was found only once (3 Aug. 1998) in the area of investigation. It developed probably on fir logs.

Sites in Poland: – **R**. Central Roztocze (Sałata 1972), Białowieża National Park (Skirgiełło et al. 1992), Jegiel reserve, Łochowski forest (Domański 1993), Szklarnia reserve (Flisińska and Sałata 1998). It is connected to coniferous wood.

Pluteus podospileus Sacc. et Cub.

The species was found on 8 Sept. 1998. It occurred on decaying beech log covered with thin layer of soil and overgrown with mosses.

Sites in Poland: Białowieża National Park (Skirgiełło et al. 1992), Jegiel reserve (Domański 1993) and Świętokrzyskie Mts. (Łuszczyński 1998).

Psathyrella impexa (Romagn.) Bon
[Syn.: *Drosophila impexa* Romagn.]

Cap conical, 2 cm in diameter, hygrophanous, dark greish-brown when wet, yellowish-ochre with pinkish tint when dry, not striate, covered in abundance with veil remnants (especially young specimens) (Pl. I. J). At maturity still many fibrils and fascicles or flocci in marginal zone of cap and on stem remain. Stipe tubular, $8 \times 0.3-0.4$ cm, white. White mycelium is present at the stipe base. Gills grey-brown, broadly adnate. Flesh cream-coloured, no smell or taste. Spore print black. Cheilocystidia and pleurocystidia lageniform, $12-14$ μm in diameter (Fig. 16). Spores broadly elliptical with distinct germ pore, brown in passing light, $9.5-10 \times 5$ μm (Fig. 17).

Romagnesi (1982) accounts that the species is very characteristic and easy to recognize because of pink tint in the cap and small spore size. In addition, Gröger (1985) mentions that *P. impexa* is difficult to be mistaken because it is the only one among *Psathyrella* representatives having pleurocystidia, which has also pink tint in the cap.

Three specimens in different stages of development occurred (1 Oct. 1998) on wood debris laying on the ground.

Sites in Poland: The species was reported for the first time from Niepołomice Forest near Kraków (Wojewoda et al. 1999).

Distribution in Europe: e.g. Netherlands – very rare (two sites), France (Kits van Waveren 1985), West Germany – 8 localities (Krieglsteiner 1991), Czech Republic (Holec 1993). In all sites it occurs accompanied by beech, so probably it is confined to this tree.

Boletales

Pseudomerulius aureus (Fr.) Jül.
[Syn.: *Merulius aureus* Fr., *M. vestator* Fr., *Serpula aurea* (Fr.) Karst., *Plicatura aurea* (Fr.) Parm., *Xylomyzon croceum* Pers., *X. solare* Pers.]

The fungus was found on log in the beech forest only once (8 Sept. 1998).

Sites in Poland: – **R**. The species is known from more than ten scattered localities.

Strobilomyces strobilaceus (Scop.: Fr.) Berk.

The species occurred (24 Aug. and 7 Sept. 1997) in beech forest.

Sites in Poland: – I. The distribution of the species in Poland is given by Skirgiełło (1972). It has scaterred localities, with the biggest concentration in Carpathian Mts. It has no sites in the northeastern periphery of the country. After 1972 it was found on a few localities.

Cantharellales

****Clavaria falcata*** Pers. ss. Bourd. et Galz
[Syn.: *C. acuta* Fr., *C. murina* Vel., *C. pampaeana* Speg., *C. perforata* Vel., *Clavulina pampaeana* (Speg.) Corner]

Breitenbach and Kränzlin (1986) mention that the base part of fruit body is a little hairy and opalescent. Individuals found in Bukowiec reserve (28 Sept. 1997) lack this feature. They occurred on bare soil at the small stream between alder and beech forests.

Sites in Poland: – I. Wrocław (Schroeter 1885–1889), Dębowiec reserve, central Poland (Ławrynowicz 1973), Wielka Wieś reserve, Wielkopolska province (Bujakiewicz 1973). *C. falcata* is a very variable species. It occurs high in the mountains as well as in warm sites (Pilát 1959).

Cortinariales

Cortinarius incisus (Pers.: Fr.) Fr. (Pl. I. K)

Two specimens of this species were found once, on 28 Sept. 1997. One of them grew on soil, the second one on a beechnut husk.

Sites in Poland: – I. The species has more than ten, scattered localities in Poland.

Cortinarius saniosus (Fr.) Fr.

Two specimens were found once in Bukowiec reserve (12 Oct. 1998).

Sites in Poland: – I. The species is known from more than ten, scattered localities in our country.

Crepidotus applanatus (Pers.) Kumm.
[Syn.: *C. scalaris* ss. Ricken]

Numerous carpophores of this fungus were found on 8 Sept. 1998 covering decaying log.

Sites in Poland: – I. More than twenty localities from Poland are known.

Flammulaster carpophilus (Fr.) Earle

The species developed in abundance on beech leaves (1, 12 July and 1, 22 Sept. 1998).

Sites in Poland: – I. Słowiński National Park (B u j a k i e w i c z and L i s i e w s k a 1983), Goleniów Forest (F r i e d r i c h 1984).

Hericiales

Clavicorona pyxidata (Pers.: Fr.) Doty (Pl. I. L)

[Syn.: *Artomyces pyxidatus* (Pers.: Fr.) Jül., *Clavaria pyxidata* Pers.: Fr., *C. petersii* Berk., *C. coronata* Schweinitz, *Clavicorona coronata* (Schw.) Doty, *Merisma pyxidatum* (Pers.: Fr.) Sprengel, *Ramaria pyxidata* (Pers.: Fr.) Qué.]

The species was found once (14 Sept. 1997) on wood in the beech forest.

Sites in Poland: – I. It is known from more than ten localities in Poland scatered mainly in the east of the country.

Lentinellus omphalodes (Fr.) Karst.

[Syn.: *L. bisus* Quél., *Lentinus omphalodes* Fr.]

In the Bukowiec reserve the species was found several times in the second year of investigations (8, 22 Sept., 12 and 26 Oct. 1998). It occurred in abundance in beech forest.

Sites in Poland: As *Lentinellus bisus* (Quél. ap. Bres.) Kühn.: the vicinity of Muszyna (G u m i ń s k a 1966), northern Wielkopolska (E n d l e r 1971), Wielkie Załonie in Pieniny Mts. (G u m i ń s k a 1981). It was also found in Białowieża Primeval Forest (S k i r g i e ł ł o et al. 1992) and Parkowe reserve, near Częstochowa (A d a m c z y k 1996).

G u m i ń s k a (1981) suggests that the fungus is very simillar to *L. flabelliformis* and it can be mistaken, so the distribution of *L. omphalodes* can be different than that known from the literature. M i l l e r and S t e w a r t (1971) differentate these two species according to a shape of cystidia. The cystidia of *L. omphalodes* are fusoid, while *L. flabelliformis* – long-clavate.

Russulales

Russula velutipes Vel.

[Syn.: *R. aurora* Krombh. ss. Melz. et Zv., *R. rosea* (Schaeff.) Quél. non Pers.]

The species was found a few times (21 July 1997, 3 Aug., 8 and 22 Sept. 1998) in the beech forest.

Sites in Poland: the vicinity of Toruń (H o ł o w n i a 1968), Świętokrzyski National Park (L i s i e w s k a 1978), Lublin (F l i s i ń s k a 1996).

As *Russula aurora* Krbhz.?: Kuźnica Białostocka (Skirgiełło 1946, 1951) and Białowieża National Park (Nespiak 1959).

Russula violeipes Quél.

The species was found once (8 Sept. 1998).

Sites in Poland: – **R.** Near Żegiestów and Muszyna, Beskid Sądecki Mts. (Lisiewska et al. 1976), Skołczanka reserve, Kraków: Tyniec (Gumińska 1991–1992), the vicinity of Kraków (Wojewoda 1996), Niepołomice Forest (Wojewoda et al. 1999).

Russula viscida Kudr.

The species occurred several times (21 and 28 Sept. 1997, 8, 22 Sept. and 1, 12 Oct. 1998) under young fir trees.

Sites in Poland: Białowieża Primeval Forest (Anonymous 1968), Babia Góra Massif, in *Piceetum montanum* association, under firs (Bujakiewicz 1979).

Stereales

**Cyphellostereum laeve* (F.: Fr.) Reid (Pl. I. M)

Fruit body white, irregularly spathulate or flabellate, with smooth hymenium, sessile or forming short, often eccentric stalk (1–6 mm long and 1–2 mm diameter). Upperside tomentous, hymenial side smooth. Hyhpae thinwalled, 3 μm in diameter, without clamps. Cystidia cylindric, thinwalled, fusiform obtuse or rounded at the tip (Fig. 18), exserted beyond the hymenium; spores ovoid, subglobose 4–5 × 2.5–3 μm with one oil drop (Fig. 19).

The species occurred (3 Aug., 1, 22 Sept. and 6 Nov. 1998) in the beech forest. It developed on the stems of mosses, in particular *Polytrichum commune* and, rarely, on *Dicranella heteromallum*, or it grew on bare soil.

The distribution of this fungus in Poland and worldwide, and detailed disscission is given by Miśkiewicz (2000).

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Rzadkie, zagrożone i nowe dla Polski gatunki macromycetes znalezione w rezerwacie „Bukowiec" (Karpaty Zachodnie)

Streszczenie

W czasie badań prowadzonych w rezerwacie „Bukowiec" w latach 1997 i 1998 znaleziono na tym terenie 44 szczególnie interesujące gatunki grzybów. Większość z nich (29) ma w Polsce zaledwie kilka stanowisk, 1 uznany został za wymarły a 15 jest zagrożonych wyginięciem. Sześciu taksonów nie notowano wcześniej z obszaru Polski; cztery z nich należą do gromady *Ascomycota* – *Catinella olivacea, Lasiosphaeria* cfr. *canescens, Phaeohelotium subcarneum* i *Trichophaea gregaria* var. *intermedia*, dwa następne do *Basidiomycota* – *Agaricus niveolutescens* i *Inocybe margaritispora*. Na największą uwagę zasługują znalezione w rezerwacie gatunki rzadkie w skali Europy. Są to: *Agaricus niveolutescens, Ascotremella faginea, Catinella olivacea, Cyphellostereum laeve, Hydropus atramentosus* oraz *Psathyrella impexa*.