

PLUTEUS ALBINEUS (BASIDIOMYCOTA) – A NEW SPECIES FOR POLAND

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The genus *Pluteus* assembles agaricoid fungi having very small to large basidiocarps, free lamellae, a pink or brownish-pink sporeprint and distinct hymenial cystidia. The species belonging to this genus are saprotrophic on humus and woody substrates. Until now it has been represented in Poland by 30 species (Skirgiełło 1999; Wojewoda 2003; Kujawa 2013). *Pluteus albineus* Bonnard is a rare species previously known only from Switzerland and France. In Switzerland it was found between 1983 and 1997 at ca 150 sites mostly in the Apples region of the canton of Vaud in the foothills of the Jura Mts (500–700 m a.s.l.) (Bonnard 2001). The French specimens were collected in northwestern France, in the Calvados (Lower Normandy) and Côtes-d'Armor (Bretagne) departments (Anonymous 2014). It is a lignicolous species occurring solitary or in small fascicles on logs and trunks of dead deciduous trees, mainly on *Fagus*, *Quercus*, *Betula* and *Carpinus*. It forms basidiocarps between May and November. New localities of this species were discovered during recent field studies in Poland. Here we present the distribution of *P. albineus* in Poland and describe it from the specimens found (Fig. 1).

The *P. albineus* basidiocarps were studied by standard methods of fungal taxonomy. Micro-

scopic structures were examined with a Bresser Bino Researcher microscope in dried material stained with Congo Red (1% in 10% ammonia solution) and in fresh material mounted in water. Drawings of microcharacters were made from microphotographs taken with a Nikon Coolpix 950 digital camera. All measurements were made under an oil immersion objective (100×). The collected material is deposited in the private herbarium of one of the authors (BGF) and in the herbarium of the Institute for Agricultural and Forest Environment, Field Station in Turew.

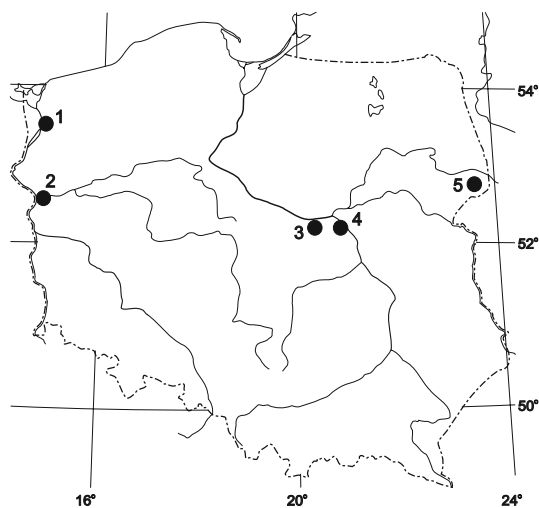


Fig. 1. Localities of *Pluteus albineus* Bonnard in Poland (numbers correspond to the numeration of localities in the text).

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Pluteus albineus Bonnard Figs 2 & 3
Mycol. Helv. 11(2): 131. 2001.

Basidiocarps of medium size, pileus up to 90 mm in diameter, planoconvex, with low umbo, white with greyish shades in center, smooth and nonstriate. Stipe white, cylindrical, up to 100 × 10 mm. Context white, smell faint, fungoid. Lamellae pinkish, free, moderately crowded. Spores ovoid, 6–8 × 4–5 μm, smooth. Basidia 4-spored, 20–27 × 4.5–6.5 μm. Cheilocystidia abundant, dimorphic: (i) long and slender, cylindrical with clavate to capitate apex 60–90 × 10–20 μm at center; and (ii) shorter, clavate to spheropedunculate, 30–47 × 10–20 μm on both sides of the lamella edge. Pleurocystidia metuloid, with 2–4 acute or obtuse hooks at apex, 50–80 × 10–18 μm, with walls up to 1.5 μm thick. Intermediate pleurocystidia with slightly thickened walls (<1.2 μm), often with mucronate apex or inconspicuous hooks, 30–45 × 10–17 μm. Pileipellis a cutis made up of cylindrical, hyaline hyphae, 30–210 × 3.0–10.0 μm, terminal elements with obtuse apex, up to 22 μm wide. Stipitipellis a cutis made of hyphae similar to those of the pileipellis, 50–190 × 7–18 μm. Clamp connections absent in all parts of basidiocarps, but scattered pseudoclamps seen in stipitipellis.



Fig. 2. Basidiocarp of *Pluteus albineus* Bonnard from Puszcza Bukowa forest (insert: pileus surface; photo by G. Domian, 25 July 2008). Scale bars = 1 cm.

The edge of the lamellae is poorly preserved in the specimens from the Puszcza Bukowa forest, but dimorphic cheilocystidia could be observed, especially near the pileus margin.

SPECIMENS EXAMINED: POLAND. 1 – POBRZEŻE SZCZECIŃSKIE COAST, Wzgórza Bukowe hills, 1.8 km N of Dobropole Gryfińskie village, Puszcza Bukowa forest [ATPOL grid square: AB-94], two basidiocarps on beech log in *Galio odorati-Fagetum*, 25 July 2008, leg. G. Domian BGF/BF/GD/080725/0001. 2 – TORUŃ-EBERSWALDE GLACIAL VALLEY, 0.3 km S of Krześniczka village, Ujście Warty National Park [AC-74], one basidiocarp on wood of deciduous tree (*Alnus?*) in riparian forest, 11 Aug. 2012, leg. T. Ślusarczyk 9/PNUW/11.08.2012. 3 – NIZINA ŚRODKOWOMAZOWIECKA LOWLAND, 0.5 km NE of Famułki Królewskie village, Kampinoski National Park, forest compartment no. 207 [ED-12], one basidiocarp on birch log in *Quercu-Pinetum*, 19 July 2012; leg. A. Kujawa 14/KAMP/190712. 4 – 3.5 km W of Łomianki village, Sieraków Protected Area, forest compartment no. 50 [ED-15], one basidiocarp on birch log in mixed forest, 24 Aug. 2012, leg. B. Gierczyk BG/KPN/120824/0011. 5 – NIZINA PÓLNOCPODLASKA LOWLAND, Hajnówka town, Józef Piłsudski Street [GC-54], one basidiocarp on dead trunk of unidentified deciduous tree, 13 Sept. 2011, leg. B. Gierczyk BGF/BF/110913/0008.

REMARKS. The micro- and macrocharacters of the collected specimen match the description and iconography of *P. albineus* given by Bonnard (2001). This species belongs to section *Pluteus*, which groups fungi with metuloid cystidia and a pileipellis of cutis type. It is one of 11 taxa (species and varieties) from this section forming white basidiocarps. Although the microcharacters of *P. albineus* (absence of clamps, cheilocystidia shape) clearly delimit this species, it may be confused with other species from this group, especially *P. nothopellitus* Justo & M. L. Castro, *P. viscidulus* Singer and *P. atricapillus* var. *albus* Vellinga. *Pluteus viscidulus* is known only from South America and it produces smaller spores (5.0–6.5 × 3.5–4.0 μm). *Pluteus nothopellitus* is a European and North American species. It differs from *P. albineus* by having shorter (<70 μm), uniform cheilocystidia and broader spores (4.5–6.5 μm). The white variety of *P. atricapillus* is easy to distinguish from *P. albineus* by its particular

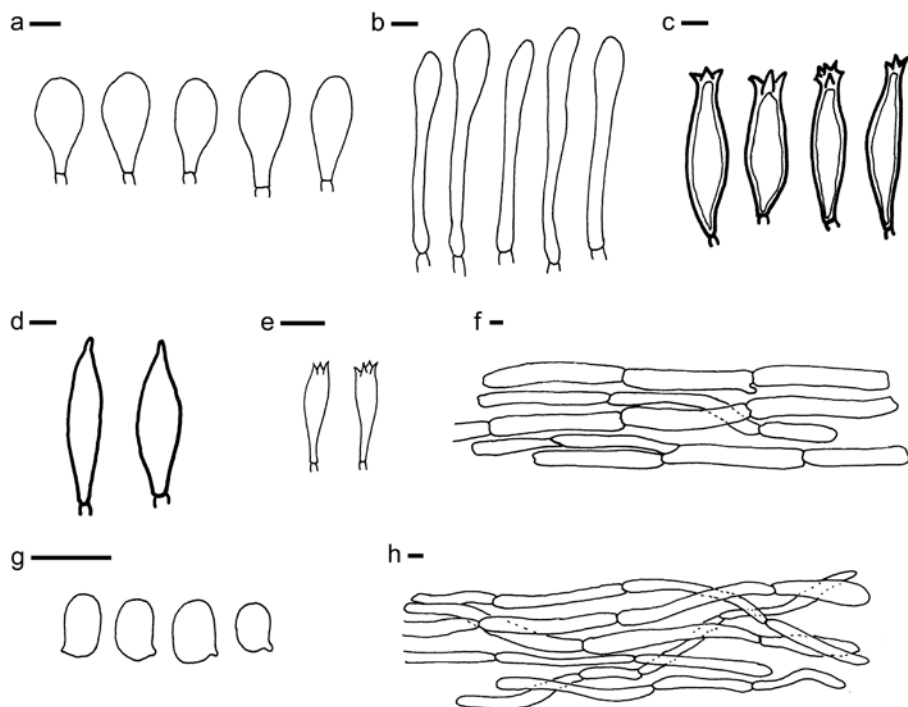


Fig. 3. Microcharacters of *Pluteus albineus* Bonnard specimen from Hajnówka town: a – cheilocystidia from sides of lamella edge, b – cheilocystidia from center of lamella edge, c – metuloid pleurocystidia, d – intermediate pleurocystidia, e – basidia, f – stiptipellis, g – spores, h – pileipellis. Scale bars = 10 μ m.

raphanoid smell and monomorphic, clavate to utri-form, shorter cheilocystidia (Justo & Castro 2007). The distribution of *P. albineus* is poorly known. Because it is not mentioned in most popular keys and mycological monographs (e.g., Horak 2005; Heilmann-Clausen 2008), most likely it occurs in other European countries but has gone unrecognized or misidentified. Keys to white *Pluteus* species and a discussion of them were published by Justo and Castro (2007).

These findings of *P. albineus* in Poland, 1000 km from the Swiss localities, suggest that it has a much wider distribution. The specimens were found in various habitats in different types of forest and also in the center of a small town. The localities were in northern and central Poland (Fig. 3) but findings in other regions are to be expected.

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