

NEW LOCALITIES OF TWO INTERESTING SPECIES OF FUNGI GROWING ON SAWDUST

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Abstract: *Hohenbuehelia geogenia* (DC.: Fr.) Singer and *Pluteus petasatus* (Fr.) Gillet on sawdust in southern Poland are presented. Detailed descriptions of both species based on fresh specimens are provided. Information on known localities of these rare taxa in Poland is given.

Key words: *Hohenbuehelia geogenia*, *Pluteus petasatus*, distribution, sawdust, Poland

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Sawdust has proved to be a favourable habitat for the growth of various species of fungi, sometimes very interesting ones. A sawdust layer is also a good basis for cultivating edible mushrooms such as e.g., *Pleurotus ostreatus* (Jacq.: Fr.) P. Kumm. (Hübsch 1977).

In the literature we can sometimes find mentions of the effect of some fungi on degradation of sawdust (Targoński 1983). Other papers deal with species of fungi growing directly on sawdust in nature (Babos 1981; Sierota & Kwaśna 1998).

Especially favourable for fungal colonization is sawdust saturated by rain water. Such a substrate has much more water-holding capacity than others. The species treated here, *Hohenbuehelia geogenia* (DC.: Fr.) Singer and *Pluteus petasatus* (Fr.) Gillet, both rare in Poland, were found on such water-saturated sawdust.

***Hohenbuehelia geogenia* (DC.: Fr.) Singer**
(Fig. 1)

Lilloa 22: 255. 1951 ('1949').

Pleurotus geogenius (DC.: Fr.) Quél., Enchir. Fung.: 149. 1886. – *Geopetalum geogenium* (DC.: Fr.) Pat., Hyménomyc. Eur.: 127. 1887.

Basidiomes of *Hohenbuehelia geogenia* have a very characteristic appearance. Pileus 4–10 cm high, funnel- or tongue-shaped, hazel to chocolate brown, with gelatinous skin and thin, initially in-

curved margin. Gills decurrent, crowded, creamy-yellowish, sometimes intervened on base. Stem short, eccentric, often attenuate to a point. Flesh whitish, stable in color when injured, taste and smell somewhat farinaceous. Spores hyaline, elliptic, 5.0–7.0 × 3.5–5.0 μm. Spore print white. Pleurocystidia thick-walled, with crystal-ornamented apex. Habitat: on soil, often near roots of deciduous trees, on sawdust or other lignicolous debris, gregarious, from August till November.



Fig. 1. *Hohenbuehelia geogenia* growing gregariously on sawdust near Opole.

The specimens of this species were found in August near Kolonia Gosławicka in the vicinity of Opole, on the lot of the Zakłady Przemysłu Drzewnego wood products factory. The specimens were growing abundantly on the surface of a thick layer of wet sawdust.

Until recently *H. geogenia* has been reported only twice from Poland: in young growth of pine and larch between Lgota and Płoki, Chrzanów district (Wojewoda 1979), and in a *Abietetum polonicum* association among grass, in the vicinity of Zwierzyniec in the Roztocze upland (Domański 1997).

In Europe (apart from Poland), *H. geogenia* has been found in many countries, especially in central and southern parts, exceptionally in the north. In Westphalia a large number of basidiomes of *H. geogenia* were found together with basidiomes of *Boletus satanas* Lenz and *B. regius* Krombh. This may suggest that *H. geogenia* is thermophilic (Jahn 1972).

Among the species of the genus *Hohenbuehelia* Schulzer, the largest one, with a characteristic shape, is *H. petaloides* (Bull.: Fr.) Schulzer. This species was described by S. Schulzer von Müggensburg *et al.* (1866), but years later it appeared that in fact there were two very similar and closely related species, *H. petaloides* and *H. geogenia*, distinguished mainly by the following feature: in *H. petaloides* the hyphae embedded in gelatinous matter in the skin on the cap lie flat, parallel to the surface of the cap, whereas in *H. geogenia* the hyphae in gelatinous matter ascend slanting towards the surface of the cap and interweave in the upper part.

Now the name *Hohenbuehelia geogenia* is generally accepted and used by many authors: Michael and Hennig (1964), Jahn (1972), Wojewoda (1979), Phillips (1981), Moser (1983), Breitenbach and Kränzlin (1991) and others. These authors accepted the existence of both *H. petaloides* and *H. geogenia*, but some of them state that intermediate forms may exist.

The specimens found on sawdust in the vicinity of Opole have a gelatinous layer in the cap identical to that described in *Hohenbuehelia geogenia*, so the name is applied in this paper.

Elborne (1995) introduced to the mycological nomenclature a new name not used by anyone today: *Hohenbuehelia petalodes* (Bull.: Fr.) Schulzer, with the same authors as for *H. petaloides* (Bull.: Fr.) Schulzer. This new name is not sufficiently explained in the paper.

Dry specimens of *H. geogenia* are preserved in the Herbarium of the Department of Botany of the Jagiellonian University, Kraków (KRA).

***Pluteus petasatus* (Fr.) Gillet** (Fig. 2)

Hyménomycètes: 395. 1876.

Pluteus patricius (Schulzer) Boud. sensu Singer, M. M. Moser, Ic. Mycol. 1: pl. 87. 1904.

Pluteus curtisii (Berk. & Broome) Sacc. sensu Singer, Trans. British Mycol. Soc. 39: 160. 1956.

Pluteus straminiphilus Wichanský, Mykol. Sborn. 45: 119. 1968.

Pileus 5–15(–18) cm, convex, with involute margin when young, later expanded with obtuse umbo, at first whitish with cream tint, with age pale brownish at center. Surface silky smooth when young, than disrupted at center with small appressed brown squamules, slightly viscid when fresh. Gills white, then salmon-pink with age, crowded, free, with lamellulae; edge tiny lacinate. Stem 5.0–13.0 × 0.5–1.5 cm, whitish, with slight tints of brown below, cylindrical, smooth. Flesh white, fairly thick, taste mild, odour un-



Fig. 2. *Pluteus petasatus* growing on layer of sawdust near Kraków (young specimens).

pleasant, somewhat sweetish or cellar-like. Spores oblong-ellipsoid, $5.0\text{--}8.0 \times 3.5\text{--}5.5 \mu\text{m}$, gray-pink, smooth. Cheilocystidia thin-walled, clavate, infrequent. Pleurocystidia thick-walled, lageniform, with 2–4 apical horns, abundant. Habitat: on old, rotten wood or wet sawdust, gregariously in clusters, rarely solitary.

The specimens of this species were gathered in September and October in Baczyn near Kraków. They grew on the surface of wet sawdust.

Pluteus petasatus has been recorded from only eight localities in Poland: 1 – near Toruń (Hołownia 1968); 2 – Kozienice woodland (Sałata 1977, under the name *P. curtisii*); 3 – Las Piwnicki Reserve, near Toruń (Hołownia 1977, under the name *P. curtisii*); 4 – Alwernia, near Chrzanów (Wojewoda 1979); 5 – Cedyń Landscape Park, Myślibórz district (Friedrich 1991); 6 – Wielka Kępa Ostromecka Reserve, near Bydgoszcz (Bujakiewicz 1992); 7 – Kraków (Wojewoda 1996); 8 – Ińsko Landscape Park, Pomerania region (Stasińska 1999).

In Europe (apart from Poland) *P. petasatus* has been found in many countries including Denmark (Lange 1940), Norway (Lange & Skifte 1967), Hungary (Babos 1981), England (Legon & Pegler 1991), Switzerland (Breitenbach & Kränzlin 1995) and others. Nearly everywhere rare.

This species has been included in the 'Red List' of threatened macrofungi in Poland (Wojewoda & Ławrynówicz 1992).

Dry specimens of *Pluteus petasatus* are deposited in the Herbarium of the Department of Botany of the Jagiellonian University, Kraków (KRA).

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