

ENTOLOMA OLLARE, A SPECIES OF SUBGENUS *CLAUDOPUS*, NEW TO POLAND

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Abstract. *Entoloma ollare* E. Ludwig & T. Rödiger, a member of the subgenus *Claudopus*, section *Claudopus*, was recently found in Poland growing in a pot with *Araucaria*. The species is characterized by greyish to beige-colored fruitbodies with a central to excentric stipe, subdistant lamellae, tomentose cap surface and farinaceous smell. The most important microscopic features are the absence of clamp connections in all hyphae (including basidia), heterodiametrical spores, and hyphae of the pileipellis with incrusting pigment. *Entoloma ollare* has so far been known from only a few localities in Germany and the Netherlands, growing in a pot with *Clivia* or *Ficus*.

Key words: *Entoloma ollare*, *Entoloma* subgenus *Claudopus*, Agaricales, Basidiomycota, Poland

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INTRODUCTION

Entoloma subgen. *Claudopus* is rather poorly represented in Poland. Out of 15 species belonging to this subgenus, only 6 species have been reported so far here: *E. byssisedum* (Pers.) Donk, *E. depluens* (Batsch) Hesler, *E. lanicum* (Romagn.) Noordel., *E. rhodocylix* (Lasch) M. M. Moser, *E. rusticoides* (Gillet) Noordel. and *E. undatum* (Fr.) M. M. Moser (Wojewoda 2003). Species from this subgenus are small, usually not exceeding a few millimeters, and generally are characterized by an omphalioid to pleurotoid habit (Noordeloos 1992, 1994, 2004). Many of these species produce an incrusting pigment on the pileipellis hyphae and form clamps. Some of them have a farinaceous smell, and few species (e.g., European species *E. alliodorum* Esteve-Rav., E. Horak & A. Ortega) have a garlic smell (Esteve-Raventós & Ortega 2003). They are usually found growing on organic matter such as rotten wood, but some have been found parasitizing other fungi (e.g., some *Cantharellus* or *Coriolus* species). Recently, another species from this subgenus, *Entoloma ollare*, was described growing in a pot with an exotic plant (Ebert *et al.* 1992; Noordeloos 2004). This species

was previously known from only a few localities in Germany and the Netherlands (Noordeloos 2004), and recently was also recorded in Poland.

DESCRIPTION OF SPECIMENS FOUND IN POLAND

Entoloma ollare E. Ludwig & T. Rödiger

Fungi Europaei, vol. 5A, *Entoloma s.l.* Suppl.: 1139–1140. 2004.

Entoloma ollare E. Ludwig & T. Rödiger, *nom. invalid.*, Z. Mycol. **58**(2): 190–193. 1992.

Pileus (Figs 1 & 2A) up to 9 mm in diameter, convex when young, with depressed center with age, in mature fruitbodies margin deflected upright, wavy and striate when moist, surface (Fig. 1C) tomentose and sparsely covered with short hairs which may be lacking in older specimens, color greyish to cream and cream-beige. Lamellae (Fig. 1D) adnate or slightly decurrent, not crowded, in older specimens wavy, whitish, pink with age (due to spore deposit). Stipe up to 5 mm long and up to 1 mm in diameter, whitish-grey, tomentose, central or eccentric, often curved and with

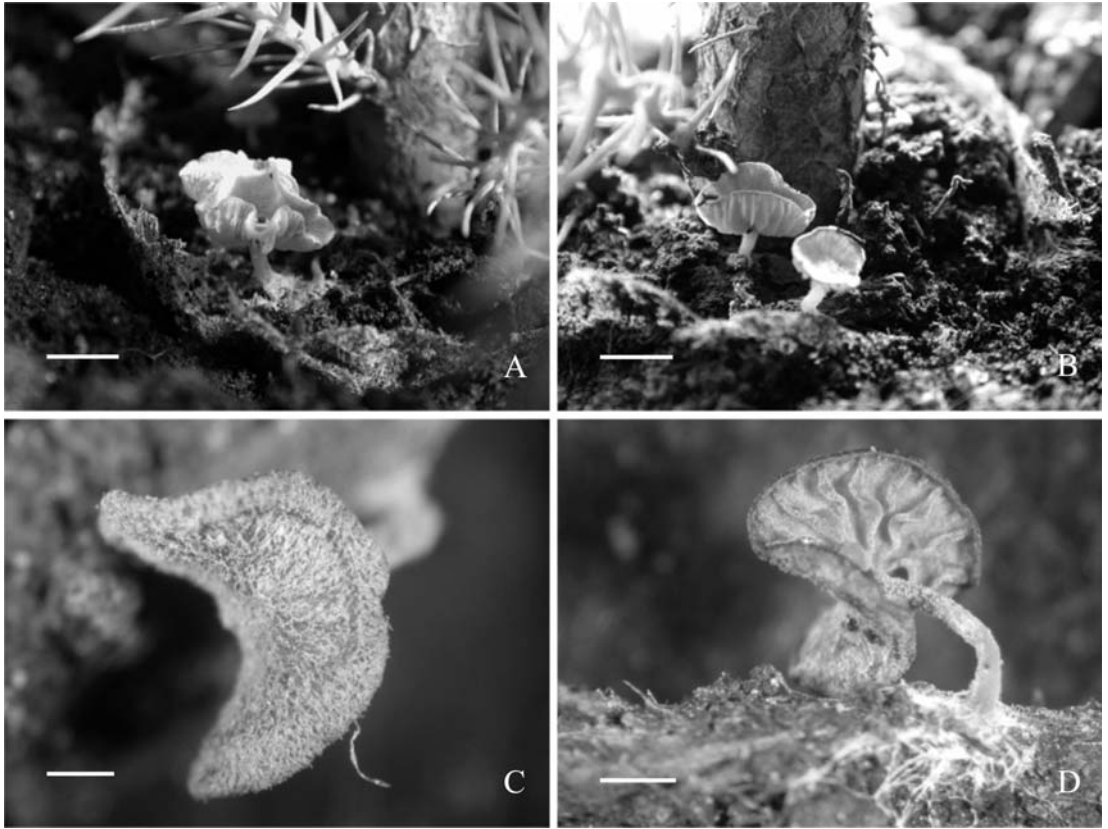


Fig. 1. Fruitbodies of *Entoloma ollare*. Scale bars: A & B = 5 mm, C & D = 1 mm.

prominent whitish mycelium and rhizomorphs at base (Fig. 1D). Smell and taste farinaceous. Spores (Fig. 2C) heterodiametrical, $8\text{--}12 \times 6\text{--}9 \mu\text{m}$ (avg. $10.1 \times 7.4 \mu\text{m}$), $Q = 1.3\text{--}1.8$ ($Q_{av}: 1.5$), $5\text{--}7(-8)$ -angled, angles rather blunt (and then spores subundulate in outline), rarely prominent; basidia (Fig. 2B) clavate to subclavate and then only slightly narrower at the base, thin-walled, rarely with thickened walls, without basal clamp, 4- or (rarely) 2-spored, $16\text{--}28 \times 6\text{--}11 \mu\text{m}$ (avg. $21.5 \times 8.5 \mu\text{m}$); cystidia absent, lamellar edge fertile; pileipellis a cutis in transition to trichoderm (Fig. 2D), composed of clampless hyphae $4\text{--}16 \mu\text{m}$ (avg. $7.2 \mu\text{m}$) in diameter, with walls covered by incrusting pigment, hyphal ends mostly curved and growing perpendicularly to the pileipellis, hyphal end-cells $(10\text{--})24\text{--}50(-100) \mu\text{m}$ long (avg. $38.4 \mu\text{m}$) and $3\text{--}15 \mu\text{m}$ in diameter (avg. $6.7 \mu\text{m}$),

mostly narrower at the end (attenuated), covered with incrusting pigment or smooth; clamps absent in all hyphae.

MATERIAL EXAMINED: POLAND, Kraków, in a private apartment (Storczykowa Street), on the surface of plant organic substrate, in a pot with *Araucaria heterophylla* (Salisb.) Franco, 12 Dec. 2006 (KRA-F 2006-10), 15 Dec. 2006 (KRA-F 2006-11), 18 Dec. 2006 (KRA-F 2006-12), 2 Feb. 2007 (KRA-F 2007-1), leg. A. M. Ociepa, det. P. Mleczko. The pot was situated at an E-exposed window; mean temperature in the room ca 20°C .

DISCUSSION

Entoloma ollare was originally described in 1992 by Ludwig and Rödiger (Ebert *et al.* 1992). As the information on the type specimens was not given

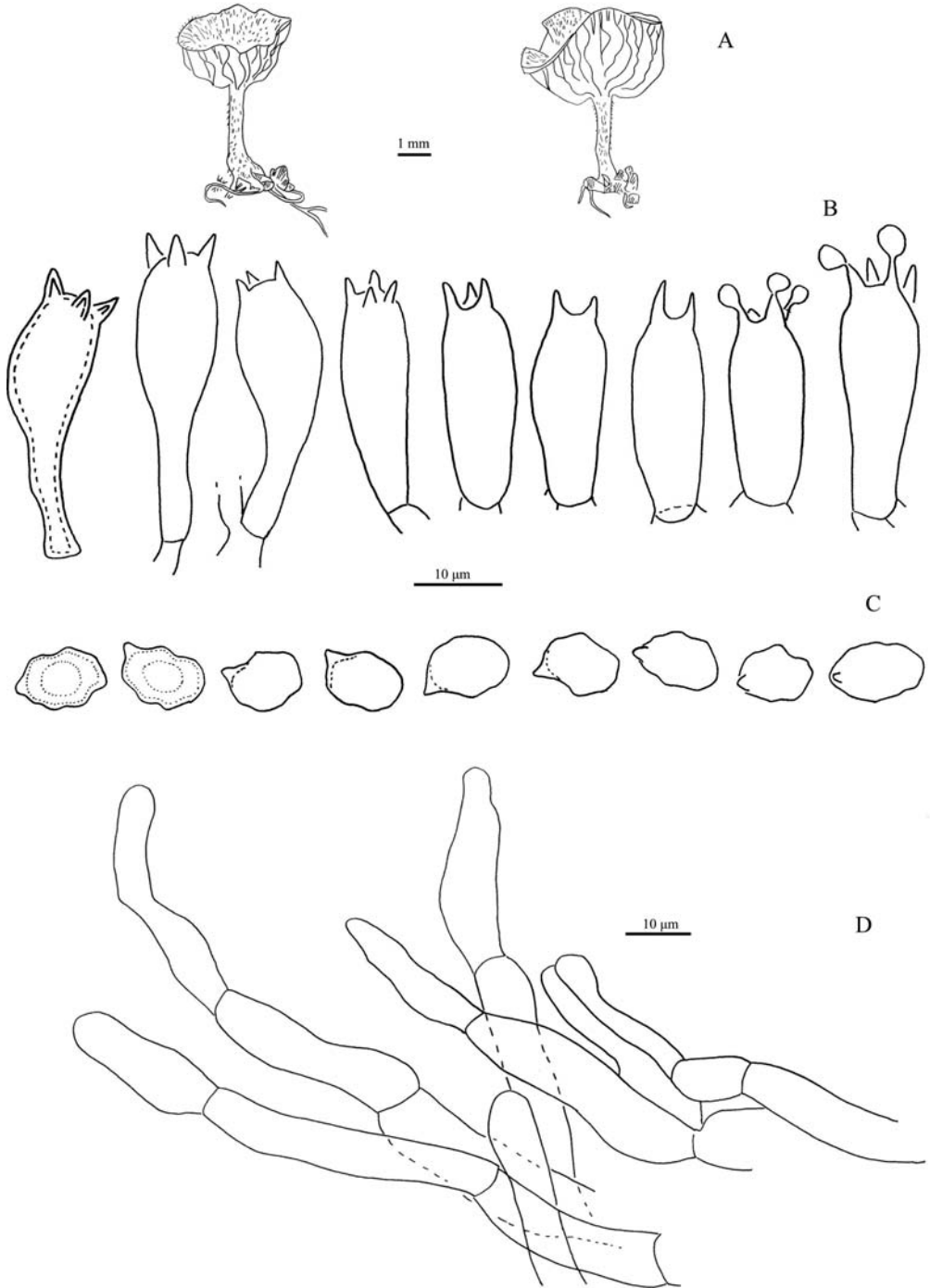


Fig. 2. Morphology and anatomical features of *Entoloma ollare*. A – fruitbodies, B – basidia (note one basidium with thickened wall), C – spores in different views, D – hyphae of the pileipellis (incrusting pigment not shown).

properly, it was redescribed in 2004 (Noordeloos 2004). The original specimens were found in Germany, growing in a pot with *Clivia* sp. in an office on a windowsill not exposed directly to sunlight but partly shaded. The fruitbodies were found only in the part of the pot exposed to the artificial light inside the room. The temperature was rather stable, ca 22°C. The species was also reported from the Netherlands (Ebert *et al.* 1992) growing in a pot with *Ficus benjamina* L., but no further ecological observations were given.

The Polish specimens were also found in a pot, but with an *Araucaria* tree. The pot was on a windowsill and not exposed to direct sunlight, but there was no clear connection between the occurrence of the fruitbodies and artificial light, unlike with the German collection. The temperature in the Polish apartment with *E. ollare* was generally lower than in the German office, ca 20°C. Interestingly, both in Poland and in Germany the fruitbodies were found during fall/winter. The fruitbodies occurred ca 4 months after mixed organic substrate for plant growth was added to the pot with *Araucaria*. The substrate, most probably imported to Poland (exact information not available), was bought at a florist's shop. Fruitbodies of *Entoloma* sp. were also found in a pot with *Ficus benjamina* L., to which the same soil was added. These fruitbodies were very tiny (ca 3 mm high), however, and did not seem fully developed. The lamellae were distant and very shallow, and pileipellis hyphae were devoid of incrusting pigment. Clamps were lacking on all hyphae, and the spores formed were similar to those of *Entoloma ollare* from the *Araucaria* pot. Light, temperature and moisture (watering regime) did not differ between the two plants, so the reasons for poor growth of the *Entoloma* fruitbodies in the pot with *Ficus* are not known.

The description of Polish specimens generally agrees with the observations of the German collections, except for slightly shorter basidia with diverse shape (clavate to subclavate) in the Polish specimens. Also the presence of rhizomorphs was not mentioned in the description of German fruitbodies.

Noordeloos (1994, 2004) included *Entoloma*

ollare in section *Claudopus* Noordel. (subgenus *Claudopus*) on the basis of its eccentric stipe and incrusting pigment. However, Ebert *et al.* (1992) argued that *E. ollare* is transitional between sections *Claudopus* and *Undati* (Romagn.) Noordel., as many fruitbodies develop central stipes, a character typical for species from the latter section. A farinaceous smell, characteristic for this species, is also more common in the *Undati* section, though it is also present in some typical *Claudopus* species (*E. byssisedum*).

The ecology of *E. ollare* is unique, as the fruitbodies have so far been found only indoors in pots with exotic plants; this suggests a possible exotic origin of the species (Ebert *et al.* 1992; Noordeloos 1994, 2004). *Entoloma ollare* is unique among the small, pale-colored *Claudopus* in Europe in its combination of greyish fruitbodies and clampless hyphae. *E. byssisedum* is larger, develops an eccentric stipe, and has abundant clamp-connections; *E. depluens*, another greyish species, also has clamps, and cheilocystidia in addition. *Entoloma pseudoparasiticum* Noordel. has light brown fruitbodies and an eccentric to lateral stipe, and differs microscopically by the presence of clamps. It also has a very specific ecology: growing on and possibly parasitizing the fruitbodies of *Cantharellus* species. Most species from sect. *Undati* are larger and darker. *Entoloma rugosum* (Malençon) Bon forms small fruitbodies with a centrally arranged stipe, which may be sordid white with age, but it forms clamps and cheilocystidia, and lacks incrusting pigment in the pileipellis hyphae.

ACKNOWLEDGEMENTS. We are grateful to Dr. Anna Ronikier (Kraków, Poland) for critically reading the text, and the anonymous reviewer for valuable remarks on the manuscript.

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Received 29 May 2007