

## NEW RECORD AND DISTRIBUTION OF *MYCENA OREGONENSIS* (AGARICALES, BASIDIOMYCETES) IN EUROPE

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**Abstract:** A new locality of a very rare species, *Mycena oregonensis* A. H. Sm., is given in Central Europe. This locality, situated in the Tatra Mts, is the first one in Poland and the Carpathians, as well as the most southeastern one known in Europe. The known distribution of the species in Europe is presented on a map.

**Key words:** *Mycena oregonensis*, Carpathians, Tatra Mts, distribution, Poland, Europe

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### INTRODUCTION

*Mycena oregonensis* A. H. Sm. was described by Smith (1936) from Oregon in North America. Only two years later, Kühner (1938) reported this species collected by J. Favre in the French Jura. It was the first locality in Europe. The second locality of *M. oregonensis* in Western Europe was found by Dörfelt (1972) in Eichsfeld Nature Park, Germany. Recently the fungus was also reported from Italy (Robich 2003). Nowadays, most European localities of this rare fungus are concentrated in Scandinavia. The first record from this region was given by Hintikka (1963); other localities were reported during the 1980s (Bendiksen & Halvorsen 1984; Strid 1984; Aronsen 1986) and can also be found in databases available on the internet.

This paper presents the discovery of the first locality of *M. oregonensis* in Central Europe.

### DESCRIPTION OF MATERIAL AND LOCALITY

*Mycena oregonensis* A. H. Sm. (Figs 1–3)

Cap 2–6 mm broad, parabolic to campanulate with prominent papilla, bright yellow to orange-yellow, darker in center and in young specimens, fading with age; margin translucently striate. Stipe

up to 3 cm long, 0.5 mm thick, equal, concolorous with cap, pruinose, covered with yellow hairs at base. Lamellae decurrent, very distant, 6–9 reaching the stipe, bright orange-yellow especially in young specimens, edge darker. Flesh thin, yellow, without any taste or odor. Beautiful yellow colors persist also on herbarium specimens.

Spores 7.5–9.0 × 3.5–5.5 μm, pip-shaped, smooth. Basidia 20–25 × 5–6 μm, clavate, with 1 or 2 sterigmata. Cheilocystidia 30–49 × 7–13 μm, fusiform, lageniform, clavate or irregular, sometimes with a few outgrowths, with yellow content. Caulocystidia 25–50 × 7–16 μm, variously shaped: cylindrical, fusiform, clavate, flexuous, sometimes branched, with yellow content. Pileipellis made of hyphae covered with simple or branched excrescences. All hyphae without clamps (Fig. 2).

**SPECIMENS EXAMINED.** POLAND. WEST CARPATHIANS. West Tatra Mts. Sarnia Skała massif, at top of massif, *Pinetum mugii carpaticum*, on fallen needles of *Pinus mugo*, alt. ca. 1375 m, 7 July 2001, leg. A. Ronikier (KRAM F-51513); 22 Aug. 2001, leg. A. Ronikier (ZAMU B/97/MT-4251).

The Tatra Mts are the highest region of the West Carpathians; they are situated at the border between Poland and Slovakia. The species was



Fig. 1. Carpophores of *Mycena oregonensis* A. H. Sm. from the locality in the Tatra Mts. Scale bar = 1 cm.

found on the N slope of the Sarnia Skała massif (Polish West Tatra Mts), close to the summit, at about 1375 m a.s.l. ( $19^{\circ}56'32''$  E,  $49^{\circ}15'55''$  N), in the *Pinetum mugii carpaticum* plant association. The fungus occurred abundantly on needles of dwarf pine, among mosses, and was observed from July to September 2001 and in August 2002 in only one place.

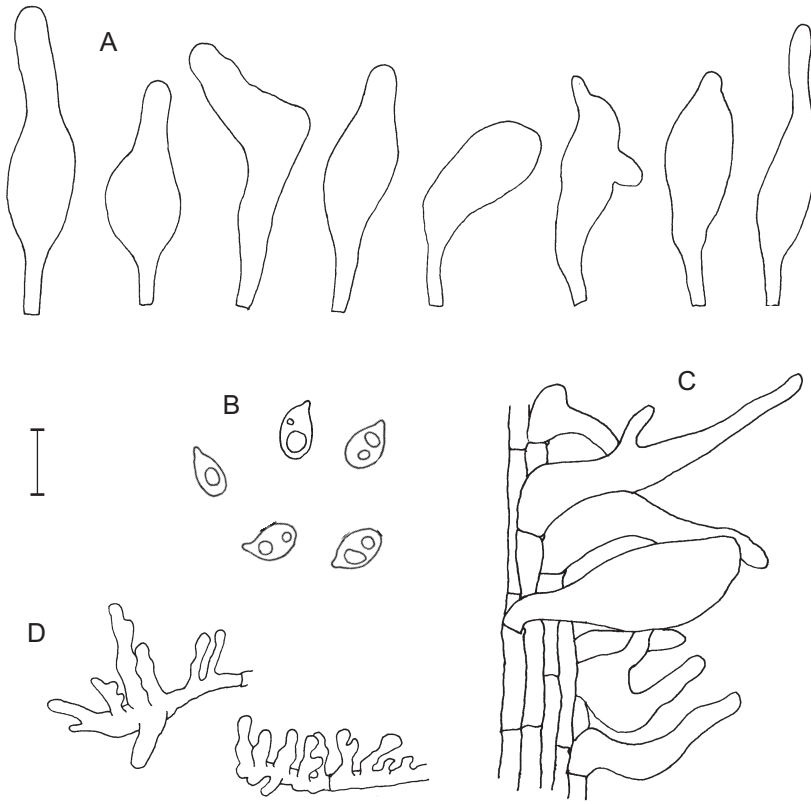
Though the calcareous massif of Sarnia Skała reaches only 1377 m a.s.l., the subalpine zone with *Pinus mugo* forest is well developed at the summit. This belt is considered to be natural; the lowering of all altitudinal vegetation zones in the massif is probably a result of local climatic influences (Piękoś 1968). Climatic conditions in the summit region of the massif resemble those developed higher, at the timberline in other parts of the Tatra Mts: the northern slopes of the Sarnia Skała massif are relatively moist and cold, especially in places with dense dwarf pine cover.

This new report of *Mycena oregonensis* from Poland is also the first one in the Carpathians and in Central Europe (Fig. 3). It is also one of the most elevated localities of this fungus in Europe.

## DISCUSSION

Young carpophores of *Mycena oregonensis* are easy to recognize thanks to their very bright yellow colors, the darker edge of the lamellae, and a distinct papilla. The yellow content of cystidia is also a characteristic feature. As old specimens fade with age, however, sometimes it is difficult to see all distinguishing features (Smith 1947).

The material from the Tatra Mts is similar to that from other European populations. As already remarked (Strid 1984; Maas Geesteranus 1990), there are some differences between American and European material. Specimens from the Tatra Mts, like most European ones, are characterized by a very distinctive papilla at the center of the cap, 2-spored basidia and broader spores (mature spores, lying on the stipe apex, are even broader in the Polish specimens than in those from other European stands). The hyphae and cystidia of specimens from the Tatra mountains are clampless. This also seems to be a feature differing between European and American collections or within the European material. The clamp connections are ab-



**Fig. 2.** *Mycena oregonensis* A. H. Sm. from the locality in the Tatra Mts: A – cheilocystidia, B – spores, C – caulocystidia, D – elements of pileipellis. Scale bar = 10  $\mu$ m.

sent in Swedish material presented by Strid (1984), but present at caulocystidia of Italian specimens (Robich 2003).

Ecologically the Polish record is quite interesting. The fungus is usually reported as growing on needles of Douglas fir and spruce (Maas Geesteranus 1990). In Europe it was usually found in spruce forest, on needles of *Picea abies*, among mosses in wet places. There is also some information about its occurrence on fern debris and small spruce twigs and cone scales (Bendixsen & Halvorsen 1984), in swampy places, and on litter under *Alnus* and *Picea* (Aronsen 1986). The population from the Tatra Mts occurred on needles of *Pinus mugo*; this broadens the substrate spectrum of the species. Smith (1947) mentioned that Kauffman reported the fungus on oak leaves and

pine needles in North America. *Mycena oregonensis* does not seem to be strictly specialized regarding substrate; it probably occurs on various elements of litter in moist and wet places. Calcareous bedrock is also mentioned by collectors quite often. The Polish population was also found on a calcareous massif, but as fungus grows in litter, not immersed in the ground, this factor is probably of less importance.

#### DISTRIBUTION IN EUROPE

The species is rare in the area of its distribution. The localities known in Europe (Fig. 3) are concentrated in Scandinavia (the localities presented in the map are based on published literature and



**Fig. 3.** Distribution of *Mycena oregonensis* in Europe: ● – previously known localities, ▲ – new locality.

are complemented by information available on the internet): Norway (Bendiksen & Halvorsen 1984; Aronsen 1986, 2003; The Norwegian Database), Sweden (Strid 1984; Olofsson 2003), Finland (Hintikka 1963; Elborne *et al.* 1992) and Denmark (Elborne *et al.* 1992). In other European countries *Mycena oregonensis* was recorded only from single localities in France (Kühner 1938), Germany (Dörfelt 1972), Italy (Robich 2003) and Poland (this paper). The species is also included in the key to British Mycenae (Emmett 1992) but without information about the locality.

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