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NEW LOCATION OF *ARMILLARIA MELLEA* IN POLISH FORESTS

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Armillaria root rot is the most important disease of woody plants in forest, horticulture plantations, and in house gardens all over the world. *Armillaria* spp. can infect more than 600 species of trees, shrubs and herbaceous plants (Hood et al. 1991, Kile et al. 1991, Mańka 2005).

The *Armillaria* genus includes more than 40 species. In Europe seven species were noted and in Poland six (Domański et al. 1967, Pegler 2000, Żółciak 2005).

In Polish forests *Armillaria ostoyae* is the most common species occurring in almost all forest sites. *Armillaria borealis* and *A. cepistipes* have been noted on coniferous and deciduous trees or shrubs. *Armillaria gallica* is most common species in oak stands and plays an important role in the complex of factors causing oak decline in many oak stands. *Armillaria mellea* was found only in one forest ecosystem (oak stand, Zielonka Forest District; Łakomy 2001) and in three other places – vineyard and two small groups of poplars out of forest (Żółciak 1999 a, b). The sixth species – *A. tabescens* was described in 1967 (Domański et al. 1967) from beech stumps in two forest districts in south-eastern Poland (Bieszczady Mountains, Stuposiany and Wetlina Forest Districts). Four *Armillaria* species (excluding *A. tabescens* and *A. mellea*) were noted by many authors (Rykowski 1990, Żółciak 1991, Mańka and Łakomy 1995, Kowalski et al. 1997, Łakomy 1998, Żółciak 1999 a, b, Łakomy and Siwecki 2000, Szewczyk and Mańka 2002, Łakomy 2004).

In 2006 two groups of *A. mellea* basidiomes were found in two localities in Strzelce Krajeńskie Forest District (compartment 177c and on the border between compartments 177c and 177f). One group was growing in the middle of a forest path (2 m from an oak stump), which was the border between a mixed stand (*Larix decidua*, *Pinus sylvestris* 55-year-old, *Quercus petraea, Fagus sylvatica, Carpinus betulus* 62-year-old, 177f) and a 64-year-old Scots pine stand with single birch (*Betula pendula*) and oak trees (177c, Phot. 1). In the second locality basidiomes appeared close to a birch stump in a Scots pine stand (177c, Phot. 2). These two localities were less than 100 m distant from each other. In the pine stand basidiomes were found close to a neighbouring oak stand (about 50 m).

The two groups of basidiomes differed from each other. Pilei of basidiomes from the path were bigger than those found on stump, and open. The margin of basidiomes growing close to the stump was rolled down.

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Phot. 1. *Armillaria mellea* basidiomes in the middle of the forest path

Phot. 2. *Armillaria mellea* basidiomes close to birch stump

The basidiomes were collected for isolation. In the laboratory haploid cultures were obtained from single-spore isolation and diploid from flesh of stipes.

Identification of the isolates was performed with mating tests, which confirmed that all isolated cultures from both groups of basidiomes belonged to *A. mellea*. Further, on the basis of somatic compatibility test, these basidiomes proved to be produced by different *A. mellea* genotypes (Korhonen 1978).

The basidiomes appeared only once in eight years of investigation in the stand. The situation was very similar to that described from Zielonka Forest District, where basidiomes appeared twice, year after year, during the last 15 years of regular investigation (Łakomy 2001).

It would be very interesting to find out if *A. mellea* is really so rare in Polish forests. The natural range of the species covers the whole of Poland (Kile et al. 1991) and *A. mellea* could be expected to occur in many deciduous tree stands. On the basis of the author's permanent observations this *Armillaria* species produces basidiomes rather seldom. In Strzelce Krajeńskie Forest District it happened once in eight years and in Zielonka Experimental Forest of The August Cieszkowski Agricultural University twice in 15 years (year after year). In addition, *A. mellea* does not produce a net of long and forking rhizomorphs in the soil. Rhizomorphs are short, fragile and they are restricted in soil to a distance of few centimetres from food base (Morrison et al. 1991). Probably because of *A. mellea* behaviour, different from the most common *Armillaria* species in Poland, the species has not been noted by scientists and rhizomorphs have not been collected from the soil or stumps and dying trees.

The study of *A. mellea* behaviour should be continued. In particular the rhizomorph system of the species in the two forest localities mentioned should be carefully examined.

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