

***Leucopaxillus lepistoides*, a new steppe fungus in Poland**

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The paper presents information on *Leucopaxillus lepistoides* (Maire) Singer, a new species for Poland. This fungus was found in two localities: the neighbourhood of Busko Zdrój and Chęciny (Little Polish Upland, S-Poland). Both localities were in the xerothermic grasslands belonging to the *Cirsio-Brachypodium* Order, *Festuco-Brometea* Class.

Key words: *Leucopaxillus lepistoides*, xerothermic grasslands, steppe fungi, thermophilous fungi

INTRODUCTION

The climatic-habitat conditions occurring in Poland, are generally adverse for developing of thermophilous, steppe sensu stricto, and southern-european species. Only some species with above mentioned characters find appropriate conditions to grow, and only on relatively small areas of southern slopes limestone or gypsum hills where existing microclimate simulates a warm and dry Mediterranean or continental climate. Occurrence of steppe fungi among Polish macrofungi biota is relatively rare. Some informations about fungi of this ecological group derive mainly from Wyżyna Małopolska (Little Polish Upland), and Pomerania, occupied by xerothermic grasslands (Bujakiewicz 1979; Łuszczynski, Łuszczynska 1991(1992), 2006 (in press); Stasińska 2003; Stasińska, Prajs 2002; Śmarda 1957; Wojewoda 1975). A new site of *Leucopaxillus lepistoides*, a typically steppe fungus on the northern limit of the steppe plants range and xerothermic grasslands is worth mentioning.

SPECIES DESCRIPTION

Leucopaxillus lepistoides (Maire) Singer Z. Pilzk., 17: 14. 1939 – *Tricholomataceae*, Agaricales, Agaricomycetidae, Basidiomycetes, Basidiomycota, Fungi (Kirk et al. 2001).

Syn.: *Tricholoma lepistoides* R. Maire

This species consists of two varieties: *Leucopaxillus lepistoides* var. *lepistoides*, and *Leucopaxillus lepistoides* var. *pannonicus* Bohus. *L. lepistoides* var. *lepistoides* has smooth spores, whereas *L. lepistoides* var. *pannonicus* is characterized by rough spores.

MORPHOLOGY. Fruit-body consists of pileus and stipe. Cap 15-25 cm diam, when young hemisphaere convex with involuted margin, white or creme, when old flattened, in the middle grayish, gray-brownish, cracked on areolas. White, indented lamellae adnated to stipe, or slightly decurrent. Stipe cylindrical, in the lower part slightly widen, relatively short, massive, 5-9 x 4-6 cm, the same colour as cap, mature with blue-greenish shade, when rubbed and/or damaged changing to intensive blue-greenish colour. Odour when fresh unspecific, sometimes floury, but in dry specimens strongly magghi. Spores in powder creme, under the microscope colourless, broadly ellipsoid, smooth, and weakly amyloid 8,1-10,4 x 5-6,5 μm (Fig. 1).

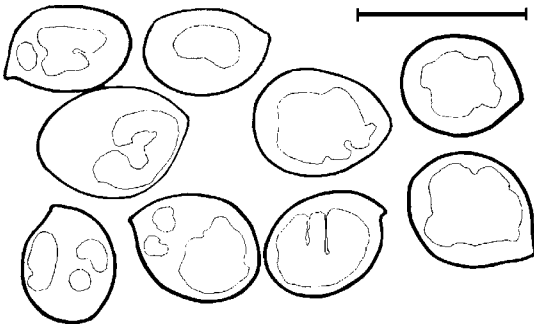


Fig. 1. *Leucopaxillus lepistoides*: spores; bar = 10 μm .

The collected material was deposited in the herbarium of the Department of Botany, Institute of Biology, Świętokrzyska Academy, Kielce (KTC 3860, 3861).

LOCALITIES IN POLAND. Until now *Leucopaxillus lepistoides* was found in Poland only on two (Fig. 2). The first one: the Nida Basin, Wola Zagojska village, 6 km SW of Busko Zdrój, and ca. 50 km S of Kielce, ATPOL square Fe 24, in the xerothermic community of *Adonido-Brachypodietum*. The patch where the fruit-bodies were found (09.07.1991, coll. J. Łuszczynski), was situated on the 25° inclined slope with the SW exposition, on the gypsum rendzinas. The floristic composition of this phytocoenosis was as follows: cover of herb layer 100%, *Brachypodium pinnatum* 2.3, *Campanula sibirica* +, *Plantago media* +.2, *Seseli annuum* +, *Astragalus danicus* +.2, *Teucrium chamaedrys* 5.5, *Festuca valesiaca* +.2, *Euphorbia cyparissias* 2.1, *Achillea pannonica* 1.1, *Asperula cynanchica* +.2, *Carex humilis* 1.2, *Festuca rupicola* 1.2, *Thymus kosteleckyanus* 1.2, *Agropyron intermedium* +, *Galium verum* +, *Medicago falcata* +.2, *Coronilla varia* +, *Poa angustifolia* +, *Plantago lanceolata* +, *Inula ensifolia* +, *Agrimonia eupatoria* +.

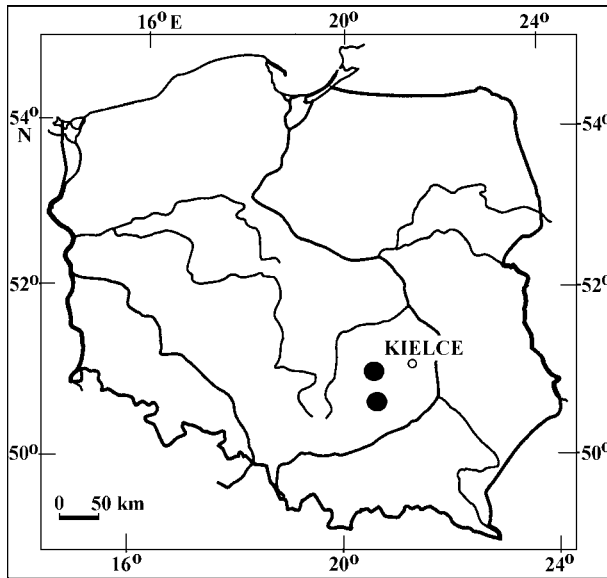


Fig. 2. Distribution of *Leucopaxillus lepistoides* in Poland.

The second site, the Polichno village, 8 km WNW of Chęciny, and ca. 17 km SWW of Kielce, ATPOL square Ee 82, in the xerothermic grassland of *Thalictro-Salvietum* (27.06.2004, coll. J. Jaworska). Fruit-bodies were found, on the 30° inclined slope with the S exposition, on the rendzinas originating from jurassic limestone. The floristic composition of this phytocoenosis is as follows: cover of herb layer 100%, moss layer 15%: *Brachypodium pinnatum* 4.4, *Plantago media* 1.1, *Prunella grandiflora* 2.2, *Anthericum ramosum* +, *Agropyron intermedium* ssp. *trichophorum* +, *Achillea pannonica* 1.1, *Campanula sibirica* 1.1, *Potentilla arenaria* 2.2, *Scabiosa ochroleuca* 2.2, *Asperula cynanchica* 2.2, *Seseli annuum* 1.1, *Anthyllis vulneraria* 1.1, *Euphorbia cyparissias* 1.1, *Dianthus carthusianorum* +, *Helianthemum nummularium* ssp. *obscurum* 2.2, *Pimpinella saxifraga* 1.1, *Salvia pratensis* 1.1, *Abietinella abietina* d 2.2, *Veronica spicata* 1.1, *Carex caryophylla* +, *Galium verum* 1.1, *Galium album* 1.1, *Silenie otites* +, *Hieracium pilosella* 1.1, *Hypericum perforatum* 1.1, *Festuca rupicola* 1.1, *Knautia arvensis* +, *Medicago lupulina* 1.1, *Trifolium pratense* 1.1.

DISTRIBUTION. Moser (1973) defines *Leucopaxillus lepistoides* as a typically steppe species. It is known mainly from Southern Europe: Bulgaria, Czech Republic, Germany, Greece, France, Hungary, Italy, Romania, Slovakia, Spain (Bohus 1966; Camboni, Migliozzi 2001; Galli 1994; Hinkova, Stoičev 1983; Lizoň 2001; Misky et al. 2003; www.manitari.gr/manitaria/list/1.htm), but also from Africa (Libya, Mauretania), Middle America (Costa Rica), and Asia (China; <http://info.kib.ac.cn/soft/2286.htm>).

DISCUSSION

Leucopaxillus lepistoides although reported from several European countries, is considered to be a very rare fungus. In Poland the biggest threat for this species may arise from the secondary succession of xerothermic grasslands and changing relations among many ecological factors, like light, temperature, humidity, and changing of substratum. It should be included in the Polish red list of threatened fungi, in category EN. In a few countries this species is on the red list data book or/and on list of fungi to be protected by law, for example in Slovakia (Lizoň 2001), and Czech Republic (Fellner 2005).

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Leucopaxillus lepistoides, nowy grzyb stepowy w Polsce

Streszczenie

Ogólne uwarunkowania klimatyczno-siedliskowe panujące w Polsce mało sprzyjają rozwojowi stepowych i południowo-europejskich gatunków. Tylko nieliczne gatunki o takim charakterze ekologicznym i geograficznym mogą rozwijać się na szczególnie eksponowanych siedliskach, wapiennych i gipsowych wzgórz. Na ciepłych i suchych siedliskach kserotermicznych występują różne gatunki grzybów zdolne znieść specyficzne warunki takich siedlisk ale grzybów o charakterze stepowym sensu stricto w Polsce mamy nie wiele. Spotykane bywają tylko na pojedynczych stanowiskach na Wyżynie Lubelskiej, Małopolskiej, Pomorzu Zachodnim i Środkowym. W okolicach Buska Zdroju, we wsi Wola Zagojska (Niecka Nidziańska) i w okolicach Chęcín, we wsi Polichno (Góry Świętokrzyskie), w murawach kserotermicznych należących do zespołów *Adonido-Brachypodietum* i *Thalictro-Salvietum*, znaleziono dwa stanowiska nowego dla Polski grzyba - *Leucopaxillus lepistoides*. Gatunek ten interesujący jest również z uwagi na jego wymagania ekologiczne, gdyż uważany jest za typowy element stepowy (Moser 1973). Nietrwały, w naszej szerokości geograficznej, charakter muraw kserotermicznych i możliwość zarastania ich przez zarośla krzewiaste stanowią poważne zagrożenie dla tego grzyba. W związku z powyższym proponuje się włączyć go do czerwonej listy grzybów zagrożonych w Polsce w kategorii wymierające (EN).

