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Volvariella surrecta – a new species in the mycoflora of Poland

DOROTA CELKA

Department of Plant Ecology and Environment Protection, Adam Mickiewicz University
Al. Niepodległości 14, PL-61-713 Poznań, Poland

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The article presents the first record of *Volvariella surrecta* (Knapp) Sing. (*Pluteaceae*) in Poland. Its fruit bodies were found on 20 October 2000 in an oak-hornbeam wood in the southern part of Poznań. The parasitic *V. surrecta* grew on decaying sporophores of *Lepista nebularis* and *Melanoleuca brevipes*. The article also describes the macroscopic and microscopic characteristics of the discovered specimens.

Key words: *Volvariella surrecta*, *Agaricales*, new species in Poland, location, municipal forest in Poznań.

The genus *Volvariella* belongs to the family *Pluteaceae* in the order *Agaricales*. It includes fungi with cap that vary in size from 1 cm to 20 cm, and in colour from white to grey and light brown. The stipe is usually white, longer than the diameter of the cap, with a fleshy volva that breaks up into lobes. There are about 25 species worldwide, about 15 of them occuring in Europe (Skirgiełło 1999; Moser 1978). Six *Volvariella* species have been reported from Poland so far (Skirgiełło 1999). All of them are on the Polish Red List of endangered macrofungi; they are classified in Category I, which contains species facing undetermined risk of extinction (Wojewoda and Ławrynowicz 1992). *Volvariella surrecta* (Knapp) Sing. [= *Volvaria loveiana* (Bk.) Gill.] occurs in Europe and North America (Breitenbach and Kränzlin 1995). In Europe it is regarded as a potentially endangered species (Winterhoff et al. 1984). It has never previously been found in Poland (Skirgiełło 1999). Of the German locations from which it has been reported, those in the vicinity of Gotha, Thringen (Gröger 1966, 1980), and in the district of Halle (Herrmann 1971), are closest to the western border of Poland.

On 20 October 2000, numerous fruit bodies of *V. surrecta* were discovered at the municipal forest Dębina, in the southern part of Poznań (Fig. 1). The dominant species of the tree layer at the oak-hornbeam community where the fungus occurs are: *Carpinus betulus*, *Tilia cordata*, *Acer platanoides*, *A. campestre*, *Ulmus laevis* and *Fagus sylvatica*. The shrub layer includes *Cornus sanguinea* and *Sambucus nigra*. In the herb layer, *Ficaria verna* and *Gagea lutea* grow abundantly during spring; later in the year the most common species are: *Chaerophyllum temulum*, *Alliaria officinalis*, *Geum urbanum* and *Moehringia trinervia*. Numerous macrofungi species were observed in the microflora of that site in October, including abundant sporophores of *Collybia confluens*, *C. butyracea* var. *asema*, *Mycena capillaris*, *M. galopus*, *Laccaria laccata*, *Clitocybe gibba*, *Marasmius bulliardii* and *Lepista nebularis* (Fig. 2), and sporadically occurring *Inocybe geophylla* and *Cystolepiota sistrata*.

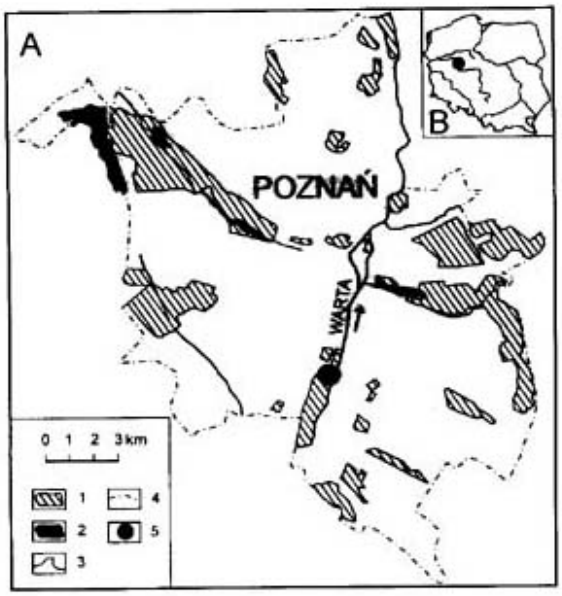

Fig. 1. The location of the *Volvariella surrecta* site in Poznań (A) and Poland (B); 1 – municipal forests and parks; 2 – lakes; 3 – rivers; 4 – city boundary; 5 – location of *Volvariella surrecta*

In the course of the study 23 specimens of *Volvariella surrecta* were found over an area of a few square metres, parasitising (individually or in clusters of three to five) on seven decaying fruit bidies of *Lepista nebularis* (Fig. 3) and three dead specimens of *Melanoleuca brevipes*. The observed specimens of the fungus were small, white, semispherical or spherical. The caps were 2–5 cm wide, surface dry and silky, with radially arranged periclinal filaments. The stipes of the examined fruit bodies were white, cylindrical and solid, with a slightly velvety upper part, 3–4 cm tall, with a diameter of 4–5 mm; the base bulbous, surrounded by a whitish saclike volva breaking up into three lobes. The flesh of the sporophores was white, with a soft taste and a delicate mushroom odour. The lamellae had the spores ellipsoidal oblong or ovate, $5.0-6.6 \times 3.3-4.4$ μm (Fig. 4); the colour of print was pink, the spore initially white, later turning salmon-pink, fine, crowded together, free, with lighter-coloured edge. The cheilocystidia were saccular-clavate or ovate-fusoid, usually with elongated apexes, the pleurocystidia almost exactly like the cheilocystidia.

Further observations at the investigated site were conducted on 29 October 2000. *Volvariella surrecta* were only observed on two specimens of *Lepista nebularis*. One of them was parasitised by a young specimen and

Fig. 2. *Lepista nebularis* – one of the hosts of *Volvariella surrecta* (Poznań, 20 Oct 2000)

Fig. 3. Six sporophores of *Volvariella surrecta* parasitizing on decaying specimens of *Lepista nebularis* (Poznań, 20 Oct 2000)

Fig. 5. Two partially snail-eaten sporophores of *Volvariella surrecta* (Poznań, 29 Oct 2000)

Fig. 6. Remains (volvae) of five snail-eaten specimens of *Volvariella surrecta* on a dead specimen of *Lepista nebularis* (Poznań, 29 Oct 2000)

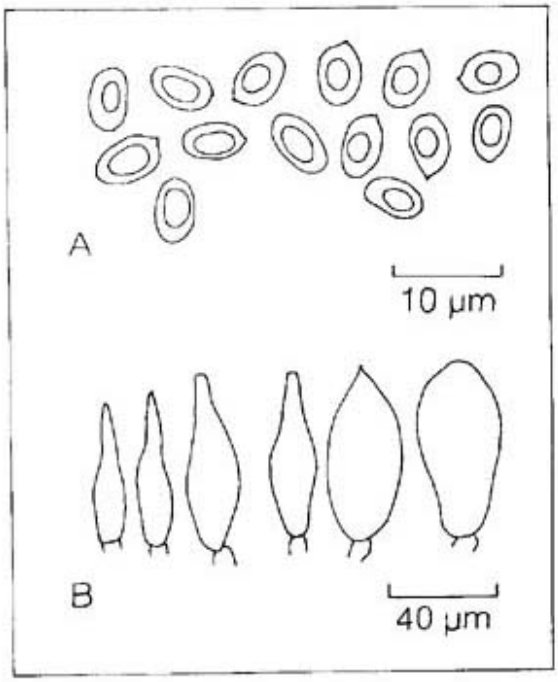

Fig. 4. Spores (A) and cheilocystidia (B) of *Volvariella surrecta* from Poznań (drawn by D. Celka)

three mature fungi, with caps damaged by snails (Fig. 5). The other *Lepista* specimen was covered with five empty volvae of snail-eaten *Volvariella* sporophores (Fig. 6). During the next observation, conducted on 20 November, no specimens of *Volvariella surrecta* were found.

The first Polish location of *Volvariella surrecta* in the southern part of Poznań has been carefully marked and will be monitored in the future.

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Volvariella surrecta – nowy gatunek dla mikoflory Polski

S t r e s z c z e n i e

W publikacji przedstawiono pierwsze w Polsce stanowisko pochwiaka pasożytniczego. Dnia 20 października 2000 roku znaleziono 23 owocniki *Volvariella surrecta* w zbiorowisku grądowym na terenie lasów komunalnych „Dębina" w południowej części Poznania. W mikoflorze badanego lasu zanotowano w tym czasie kilkadziesiąt gatunków grzybów wielkoowocnikowych, z tego masowo owocowały, m.in. *Collybia confluens*, *C. butyracea* var. *asema*, *Mycena capillaris*, *M. galopus*, *Laccaria laccata*, *Clitocybe gibba*, *Marasmius bulliardii* i *Lepista nebularis*. *Volvariella surrecta* pasożytowała pojedynczo i w skupieniach na obumarłych owocnikach *Lepista nebularis* i *Melanoleuca brevipes*. Pochwiaka obserwowano jeszcze w końcu października, jednak owocniki były wówczas częściowo zjedzone przez ślimaki. W pracy zaprezentowano charakterystykę cech makroskopowych i mikroskopowych znalezionych okazów *Volvariella surrecta*.