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Sistotrema dennisii (Basidiomycetes, *Sistotremataceae*) – a new species for the Czech Republic

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Sistotrema dennisii Malençon (Basidiomycetes, *Sistotremataceae*) was discovered in the Czech Republic for the first time. It is an inconspicuous, resupinate species with arachnoid pores that could have been neglected in the field. Characteristic features of this and similar species are presented, together with a description of the locality and notes on its distribution.

Key words: *Sistotrema*, *Sistotremataceae*, polypores, central Bohemia.

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Resupinátní rozděrka *Sistotrema dennisii* Malençon (Basidiomycetes, *Sistotremataceae*) byla poprvé objevena v České republice. Nalezená houba patří k nenápadným, pavučinovitě poroidním resupinátním druhům a mohla být dosud v terénu přehlížena. Jsou uvedeny typické znaky, porovnání s podobnými druhy, popis lokality a poznámky k rozšíření druhu.

INTRODUCTION

Polyporaceous fungi have been intensively explored in the Czech Republic for a long time especially by A. Pilát, F. Kotlaba, Z. Pouzar and P. Vampola. Still, many species new to the Czech Republic have been recorded since a comprehensive survey of Czech polypores was published by Kotlaba (1984). In this paper, another poroid fungus species, *Sistotrema dennisii* Malençon (*Cantharellales*, *Sistotremataceae*), is reported from the Czech Republic for the first time. This species seems to be very rare in its whole distribution area (Ryvarden and Gilbertson 1994). Moreover, it is very inconspicuous in the field and similar to some more common polypores. *Sistotrema dennisii* looks particularly very much like *Trechispora mollusca* (Pers.: Fr.) Liberta, a common species.

The genus *Sistotrema* was adopted by Fries (1821) including one species only, *Sistotrema confluens*. *Sistotrema* is remarkable by having more than four sterigmata on the basidia in most species. The latest taxonomic studies range this

genus in the order *Cantharellales* (Binder et al. 2005), with its own family *Sistotremataceae*. The genus contains corticioid and hydnoid as well as poroid species and some species can form both types of fruitbodies. Four poroid species of *Sistotrema* have been recorded in Europe (Ryvarden and Gilbertson 1994): *Sistotrema albolutea* (Bourdot & Galzin) Bondartsev & Singer, *Sistotrema confluens* Pers., *Sistotrema dennisii* Malençon, and *Sistotrema muscicola* (Pers.) S. Lundell. Two of them have been recorded in the Czech Republic, *S. confluens* (summary in Kotlaba 1984) and *S. muscicola* (Vampola 1991), both of which are listed in the Red list of macromycetes of the Czech Republic (Kotlaba et al. 2006). A third species is reported here, with comments on all poroid *Sistotrema* species occurring in Europe.

MATERIAL AND METHODS

The fungus was collected in October 2007 during a field survey of Roudný Nature Monument near Votice, Czech Republic. Inspection of the main Czech mycological herbaria (PRM and BRNM) revealed no other collections of *S. dennisii* in the Czech Republic. Specimens were studied with an Olympus BX41 microscope. The microscopic mounts were prepared in a standard way using Melzer's reagent and a 5 % KOH solution. A 100× oil immersion lens was used. Voucher specimens are deposited in the private herbarium of the author and in the National Museum, Prague (herbarium PRM).

RESULTS AND DISCUSSION

Sistotrema dennisii Malençon, Kew Bull. 31(3): 490, 1977 Figs. 1, 2

Description. It is exlusively based on the collection cited below. The fruitbody initiates growth radially from the hyphal cord. It starts as a loose white web of hyphae without pores. Finally, the species forms an annual, resupinate, arachnoid fruitbody of irregular shape, about 2 cm in diam., with a white to cream poroid surface that becomes yellowish during drying from the centre to the margin. Old and dead parts are hard and amorphous, similar to dry fruitbodies of some whitish heterobasidiomycetes. A thin, pure white subiculum expands around the fruitbody and creates an up to 0.2 cm broad, loose margin, without pores. Here new pores arise that become gradually higher to the middle of the fruitbody. The pores are round and angular, thin-walled with lacerate dissepiments in older parts, irregular (on a rough surface) to regular, very variable, 2–6 per mm, generally smaller in younger parts.

The hyphal system is monomitic, generative hyphae thin-walled, hyaline, 2–5 µm in diam., with large conspicuous clamps and abundant oily inclusions (in 5 % KOH). Cystidia are not present. Basidia 12–20 x 5–6 µm have a typical shape indi-

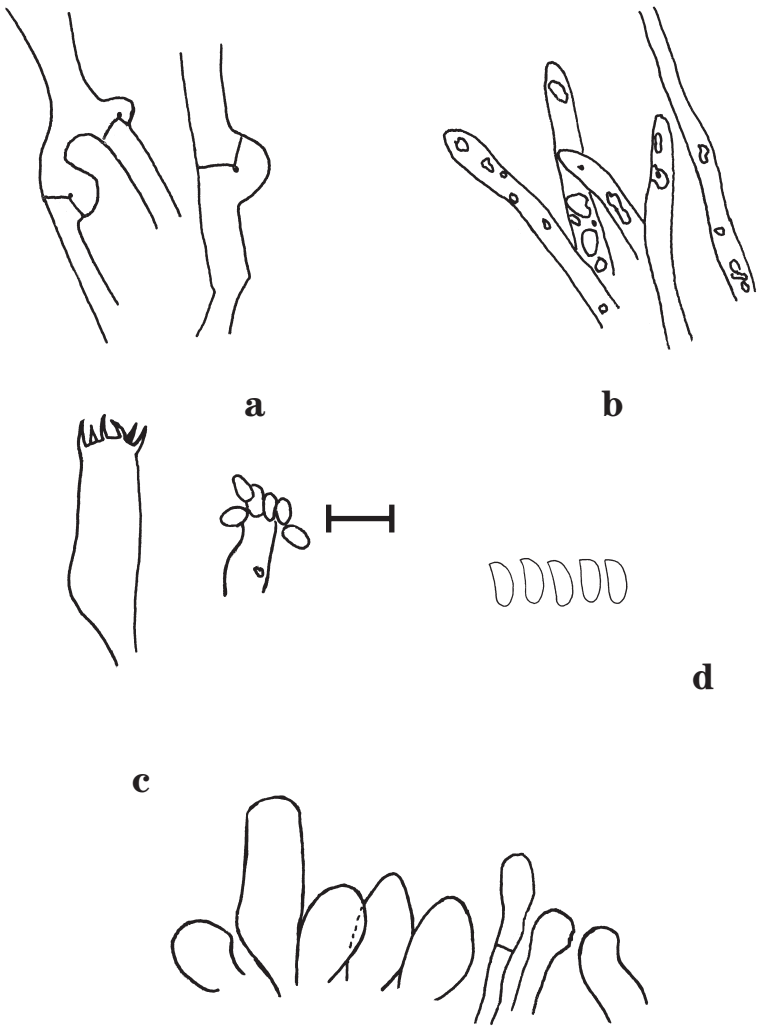

Fig. 1. *Sistotrema dennisii*: a – clamped hyphae; b – hyphae with oily inclusions; c – basidia; d – spores; e – immature basidia from the hymenium. Bar = 5 µm.

cated as urniform and carry 6–7 sterigmata, a character clearly distinguishing the poroid group of the genus *Sistotrema* from other polypores in Europe. Immature basidia of globose to ovoid shape contain rich oily inclusions. Spores are smooth, cylindric to very slightly suballantoid, 4–4.5(–5) × 2–2.2 µm. Their length does not exceed 5 µm. However, in European Polypores (Ryvarden and Gilbertson 1994), a length of up to 6 µm is reported. All microscopic structures are negative in Melzer's reagent.

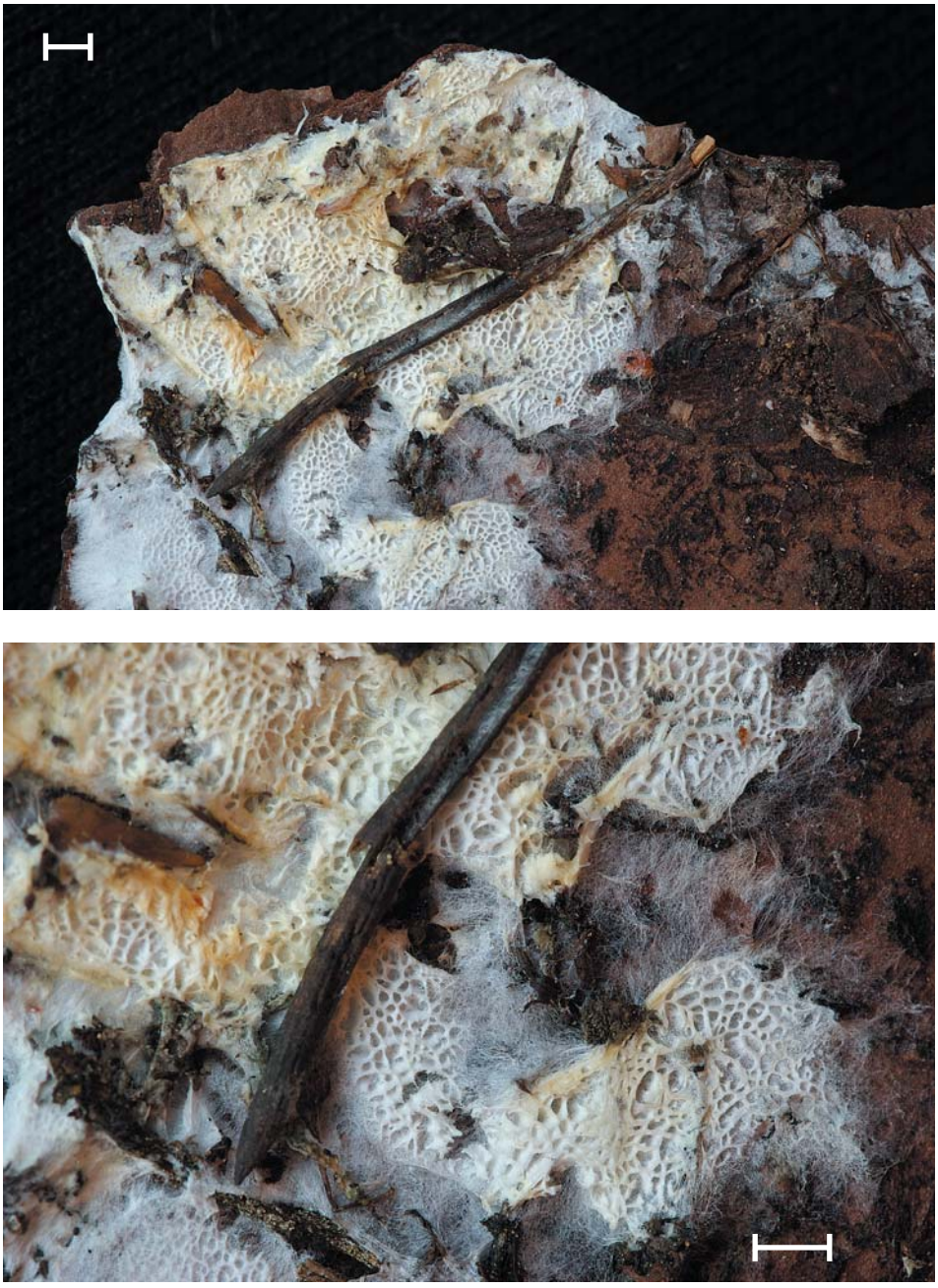

Fig. 2. *Sistotrema dennisii* – dried fruitbody stored in the PRM herbarium. Bar =1 mm. Photo: T. Zíbar.

Locality. Central Bohemia, Benešov District, Roudný Nature Monument (PP Roudný), about 450 m a. s. l., 49° 36' 52" N, 14° 48' 50" E, 11 Oct 2007, leg. et det. J. Kout, rev. J. Vlasák, private herbarium J. Kout, duplicate in National Museum, Prague (PRM 858178).

Substrate and habitat: on dead log of *Pinus sylvestris*, inner part of the bark. There were other saprotrophic species on the same pine log: *Botryohypochnus isabellinus* (Fr.) J. Erikss. and *Oligoporus leucomallellus* (Murrill) Gilb. & Ryvarden. These species grew on the wood, not on bark. PP Roudný is situated about 1 km SE of the village of Roudný near Votice. It was a goldmine in the past and was used as a sewage storage basin by the year 1930. Since then, the place has been overgrown mainly by pine forest on sandy soil (prevalent trees: *Pinus sylvestris* L., *Picea abies* L., *Betula pendula* Roth). Second growth young to middle-aged monocultures of pine and spruce create most of the vegetation. Dead trunks occur only sparsely. A detailed description of Roudný Nature Monument can be found in Ložek et al. (2005).

Notes. Three other poroid species of *Sistotrema* occur in Europe: *S. albolutea*, *S. muscicola* and *S. confluens*. For identification, the basidiospores are most important. Two resupinate species, *S. albolutea* and *S. muscicola* (*S. albolutea* has never been recorded from the Czech Republic) have subglobose and elliptic spores, respectively, that are very different from *S. dennisii*. *S. confluens* has cylindric basidiospores of similar size, but in *S. dennisii* they are slightly bent. Moreover, *S. confluens* creates mostly stipitate fruitbodies and can only rarely be resupinate, and its basidia are larger (20–25 µm long) than in *S. dennisii* (14–20 µm long) (Ryvarden and Gilbertson 1994).

The ecology of the poroid genus *Sistotrema* is not very well known. Until recently, this group of fungi was considered to be saprotrophic, with both wood decaying and humus degrading capacity. Ryvarden and Gilbertson (1994) mention white rot for *S. confluens*, an unknown rot type for *S. muscicola* and probable litter degradation for other two poroid *Sistotrema* species . Rather new insights into this question were presented by Nilsson et al. (2006), who demonstrated mycorrhizal symbiosis of two poroid species of the genus *Sistotrema* (*S. albolutea* and *S. muscicola*) by using a fruiting body-guided sequence analysis of mycorrhizal root-tip mycelia. The ITS sequences and photos of both species were added to the UNITE database (Kõljalg et al. 2005). Results of the phylogenetics analysis revealed that whereas the broadly delimited genus *Sistotrema* is polyphyletic, the mycorrhizal lineage, denoted as the *S. confluens* group, is monophyletic (*S. albolutеum*, *S. confluens*, *S. muscicola*). *S. dennisii* probably belongs here too, but was not investigated.

S. dennisii is mostly found on very rotten wood or on litter (Malençon 1977, Ryvarden and Gilbertson 1994, PRM 715712). The specimen from Roudný, however, grew on relatively firm pine bark. If *S. dennisii* belongs to mycorrhizal spe-

cies, then the substrate is not so important. Some corticioid mycorrhizal genera like *Tomentella* Pers. ex Pat. and *Piloderma* Jülich grow much like *Sistotrema* on the surface of the wood. Kõljalg et al. (2001) described formation of fruitbodies from rhizomorphs of *Tomentella*. One young small part of the investigated *S. dennissii* specimen was observed to form a loosely arranged web of hyphae radially from a thick filament. This filament started in the humus, which may indicate its mycorrhizal status.

Sistotrema dennisii was described by Malençon (1977) from northern Morocco, growing on needles under *Pinus pinea*. It has since been recorded several times in Europe but it may be still regarded as very rare. Denmark (Danish red list – Stoltze et al. 1998), Belgium (PRM 715712), Germany (Anonymus on-line), Great Britain (Scotland) (Cooper and Kirk on-line), Sweden, and France (Ryvarden and Gilbertson 1994) are the countries where it was found. Now, *Sistotrema dennisii* may also be added to the fairly rich list of polyporoid fungi of the Czech Republic.

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