

***Daleomyces phillipsii* (Ascomycota, Pezizaceae), new  
Moravian finds and its distribution in the Czech Republic**

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Antonín V. (2005): *Daleomyces phillipsii* (Ascomycota, Pezizaceae), new Moravian finds and its distribution in the Czech Republic. – Czech Mycol. 57(3-4): 249-256.

Three new localities of *Daleomyces phillipsii* in Moravia are reported, the distribution of this fungus in the Czech Republic and in Europe is summarised and its systematic position commented. The fungus is considered a well-delimited species of the separate genus *Daleomyces*, not only a sparassoid form of *Peziza proteana* (commonly treated as "f. *sparassoides*").

**Key words:** *Daleomyces phillipsii*, description, taxonomy, Europe.

Antonín V. (2005): *Daleomyces phillipsii* (Ascomycota, Pezizaceae), nové moravské lokality a jeho rozšíření v České republice. – Czech Mycol. 57(3-4): 249-256.

Jsou publikovány tři nové lokality vřečkovýtrose houby *Daleomyces phillipsii* na Moravě, její celkové rozšíření v ČR a v Evropě a je krátce diskutováno její systematické zařazení. Houba je považována za dobře ohraničený druh samostatného rodu *Daleomyces*, nikoliv za pouhou sparassoidní formu kústěbky *Peziza proteana* (v pojetí většiny současných autorů jako „f. *sparassoides*“).

#### INTRODUCTION

During the past years, large and distinct fruitbodies of the ascomycetous fungus *Daleomyces phillipsii* (Masse) Seaver have been found on several rather fresh bonfire sites in southern and south-eastern Moravia (Czech Republic). As the fungus is very rare in the Czech Republic (four records until 2000), new collections are reported here. The aim of the paper also is to discuss the systematic position of this fungus.

#### MATERIAL AND METHODS

Microscopic features are described from material mounted in Melzer's reagent and Cotton Blue. For the ascospores the following factors are used: E (quotient of length and width in any one spore) and Q (mean of E-values). Authors of fungal

names are cited according to Kirk and Ansell (1992), colour abbreviations according to Kornerup and Wanscher (1983), herbarium abbreviations follow Holmgren (2003), and literature citations Bridson (2004).

## RESULTS

### DESCRIPTION OF COLLECTED FRUITBODIES

***Daleomyces phillipsii*** (Masse) Seaver, N. Amer. Cup Fungi, p. 242. 1942.

Ascomata 100–250 mm broad, 80–150 mm high, irregularly globose, sparassoid, attenuated and radicate at base. Surface with numerous morcheloid ribs and caverns (sponge-like structure), whitish, light yellowish to pale violaceous. Thecium smooth, glabrous, white when young, then violaceous brown (9E9), sterile lobes finely white pubescent.

Ascospores 9.7–12.5 x 5.7–7.0  $\mu\text{m}$ , E = 1.7–2.0, Q = 1.8, ellipsoid, thin-walled, cyanophilous, ornamented with  $\pm$  large, up to 1.25(–1.5)  $\mu\text{m}$  high, irregularly shaped, rarely anastomosed cyanophilous warts and crests which are usually enlarged at the poles. Asci up to c. 200 x 8.5–12  $\mu\text{m}$ , cylindrical, operculate, eight-spored. Paraphyses cylindrical, straight, septate, hyaline, 3.0–4.5  $\mu\text{m}$  wide, more or less clavate-dilated at apex, apex 6.5–9.0  $\mu\text{m}$  wide.

**Ecology.** *Daleomyces phillipsii* mostly grows on rather fresh bonfire sites, or at least on places with coal dust.

**Phenology.** According to Dennis (1978) the species fructifies in September and October, Jahn and Wiegand (1977) found it in November and December. The Czech finds were made from September to December, but it was also collected in June (Jazevčí) and July (Slavkov).

**Material studied.** BOHEMIA: Dalovice near Mladá Boleslav, in a garden, coord. N 50°25'34", E 14°53'08", 28 Sept. 1992 leg. K. Kopecký, R. Knížek and J. Herink, det. J. Herink and Z. Pouzar (PRM 892095). – Třeboň, in the town, coord. N 49°00'23", E 14°45'42", 6 Dec. 1992 leg. et det. F. Kotlaba (PRM 876869). – MORAVIA: Dolní Věstonice, site called "Na pískách", on a bonfire sites, alt. c. 150 m, coord. N 48°53'30", E 16°38'10", 19 Nov. 1978 leg. J. Moravec and A. Vágner, det. J. Moravec (BRNM 339753). – Bílé Karpaty (White Carpathian) Mts., Tvarožná Lhota, Čertoryje National Nature Reserve, on a bonfire sites, alt. c. 370 m, coord. N 48°51'15", E 17°25'00", 27 Oct. 2000 leg. et det. V. Antonín and A. Vágner (BRNM 667654). – Ibid., 14 Nov. 2000 leg. I. Jongepierová, det. J.W. Jongepier (herb. Jongepier, as *Peziza proteana* f. *sparassoides*). – Bílé Karpaty (White Carpathian) Mts., Javorník nad Veličkou, Jazevčí National Nature Reserve, on a bonfire sites, alt. c. 360 m, coord. N 48°52'15", E 17°33'55", 18 June 2004 leg. et det. V. Antonín 04.67 (BRNM 691313). – Miroslav, Miroslavské kopce National Nature Monument, part called "U kamene", on a bonfire sites, alt. 240–250 m, coord. N 48°55'53", E 16°18'13", 7 Nov. 2004 leg. et det. V. Antonín 04.327 (BRNM 695450).

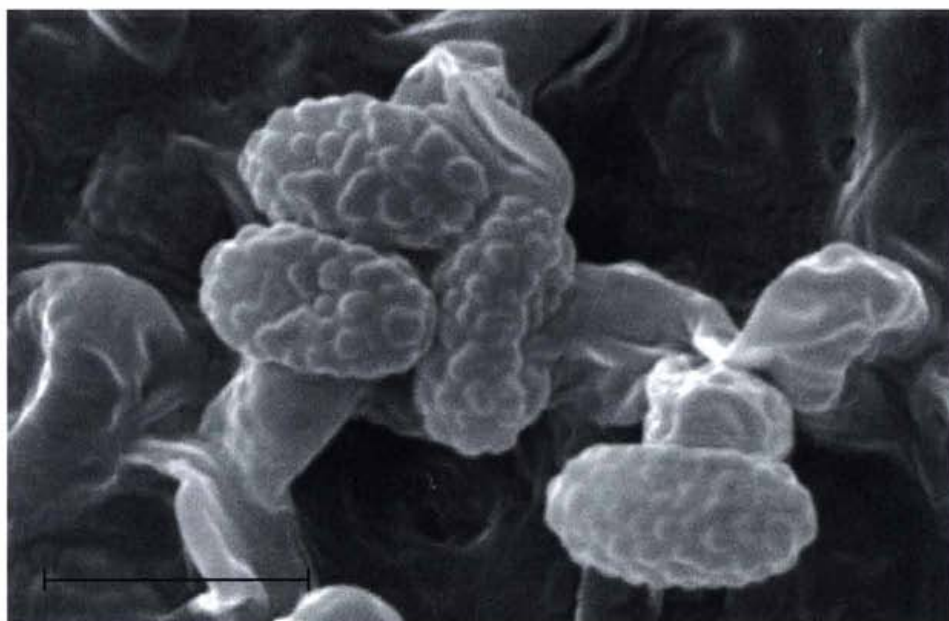


Fig. 1. *Daleomyces phillipsii* (Dalovice near Mladá Boleslav, 28 Sept. 1992): carpophore. Photo R. Kružek.



Fig. 2. *Daleomyces phillipsii* (Miroslav, Miroslavské kopce, 7 Nov. 2004): carpophore. Photo V. Antonín.





**Fig. 3.** Ascospores of *Daleomyces phillipsii* (Dolní Věstonice, "Na pískách") in SEM photomicrograph (photo V. Procházka) and under light microscope (coloured with Cotton Blue, photo V. Antonín). Scale bars = 10  $\mu$ m.



Fig. 4. *Daleomyces phillipsii* (Dolní Věstonice, "Na pískách"). Ascospores and tops of paraphyses. Scale bar = 20  $\mu$ m. Del. V. Antonín.

#### DISCUSSION

##### Taxonomic remarks

The taxonomic position of *Daleomyces phillipsii* has changed since its description by Masee (1895). Originally it was described as *Gyromitra* by Masee and since that, it has been placed into many genera (for a detailed synonymy see Moravec 1982). In recent literature, the name *Peziza proteana* (Boud.) Seaver f. *sparassoides* (Boud.) Korf is often used. This concept was introduced by Korf (1956, 1973) based on the similar microscopic characters (especially amyloid asci, ascospore size and ornamentation) of *P. proteana* and Masee's fungus. This concept was followed by Dennis (1978), Rifai (1968) and some other authors, but was not accepted by Moravec (1982). I also consider this fungus different from the genus *Peziza*. The size of ascomata, their semihypogeous development and internal structure are unusual for *Peziza*. Moreover, this opinion is supported by the facts that (1) neither simple shaped apothecia of *P. proteana* "f. *proteana*" nor a transient form have been found together (or at the same place) with the sparassoid form, (2) sparassoid forms of other *Peziza* species growing on burnt places (e.g. *P. echinospora*) look quite different concerning internal structure (Glejdura pers. comm.), and (3) the sparassoid fungus is more common than the typical *Peziza proteana* which has never been found in the Czech Republic. These observations correspond well with those by Moravec (1982 and pers. comm.).

Hansen et al. (2001) included only *P. proteana* f. *proteana* in their extensive anatomic-morphological and phylogenetic studies of the *Pezizaceae*. The conspecificity of *P. proteana* and *Daleomyces phillipsii* should be tested in future using molecular taxonomic methods.

### Distribution in Europe

In Europe, *Daleomyces phillipsii* is known from Belgium (Wuilbaut 1999), the Czech Republic (see below), Denmark (Dissing et al. 2000), Estonia (Kalamees 2001), France (e.g. Crozes 1999, Van Vooren 2003), Germany (e.g. Jahn and Wiegand 1977), Great Britain (e.g. Dennis 1978), Italy (Cetto 1989, Zuccherelli 1993), Hungary (Bánhegy 1937), the Netherlands (Arnolds et al. 1995), Slovakia (Škubla 2003), Spain (Balearic Islands: Siquier et al. 1998), Sweden (e.g. Dissing et al. 2000, Jaederfeldt 1997), and Switzerland (Ciana 1987).

### Distribution in the Czech Republic

The first collection of *Daleomyces phillipsii* was made 19 July 1943 by L. Maláč, who found it in a service yard of a factory in the town of Slavkov (Southern Moravia, near the city of Brno, Neuwirth 1946). Neuwirth (l. c.) made a detailed description of it and took a black-and-white photograph and described it as *Aleuria proteana* (Boud.) Seaver var. *slavkoviensis* Neuwirth; its type specimen is not preserved. The second Moravian collection was made by J. Moravec and A. Vágner in 1978 (see Material studied) and published by Moravec (1982).

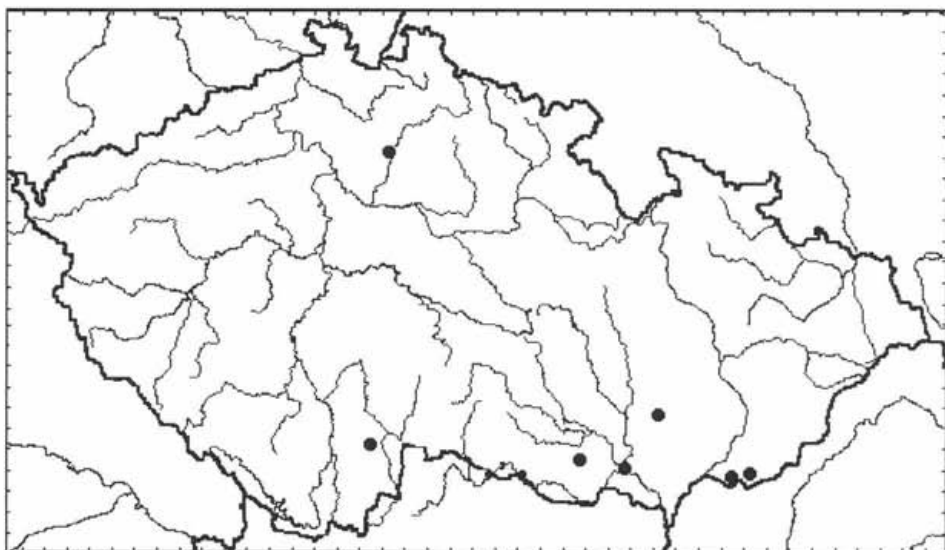


Fig. 5. Distribution map of *Daleomyces phillipsii* in the Czech Republic (generated from the Fungi 3 programme by J. Slavíček).

In Bohemia (western part of the Czech Republic), this fungus has been collected twice. Both collections were made in the early 1990s in southern Bohemia and the north part of central Bohemia (see Material studied and map – Fig. 5). Near Dalovice it has been found on a fresh (from this year) bonfire sites and weighed about 4 kg. Next year (1993), only a small ascoma (about 3 cm in diam.) was found there 27 July, then it stopped its growth and 12 August it had disappeared. No other ascomata have been found since that time there (Knížek in litt.). In the town of Třeboň, it was found on the place of a former waste dump where not fully carbonised remnants from a boiler room and coal dust were deposited.

Therefore, finds reported here represent the fifth to seventh locality in the Czech Republic.

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