

## First record of a *Pseudobaeospora* species from the Czech Republic

SLAVOMÍR ADAMČÍK<sup>1</sup> and SOŇA RIPKOVÁ<sup>2</sup>

<sup>1</sup>Institute of Botany, Dúbravská 14, SK-845 23 Bratislava, Slovakia;

<sup>2</sup>Comenius University, Faculty of Natural Sciences, Department of Botany,

Révová 39, SK-811 02 Bratislava, Slovakia;

ripkova@fns.uniba.sk

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During the fourth meeting of young mycologists in the Protected Landscape Area of Třeboňsko (16–19 October 2003) we found a taxon of the genus *Pseudobaeospora* characterised by the absence of clamp-connections. Comparing our specimen with the two other European species without clamp-connections, *P. oligophylla* (Singer) Singer and *P. pillodii* (Quél.) Wasser, we have come to the conclusion that our specimen does not fit either species. More specimens are needed for a definite delimitation of this presumably new taxon.

**Key words:** fungi, *Tricholomataceae*, *Pseudobaeospora*

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Na 4. stretnutí mladých mykológov v CHKO Třeboňsko (16.–19. október 2003) sme našli taxón z rodu *Pseudobaeospora* Singer, vyznačujúci sa absenciou praciek. Porovnaním nášho zberu s dvoma ďalšími druhmi, ktoré nemajú pracky, *P. oligophylla* (Singer) Singer a *P. pillodii* (Quél.) Wasser, sme dospeli k záveru, že náš zber nemôžeme stotožniť ani s jedným z nich. Na ohraničenie predpokladaného nového taxónu je však treba viac zberov.

### INTRODUCTION

The genus *Pseudobaeospora* Singer, a little known member of the family *Tricholomataceae*, is characterised by small to very small, collybioid, mostly violet basidiocarps (a few species have basidiocarps with whitish, greyish or pale brown tints), and by the presence of thick-walled and dextrinoid basidia and spores.

In October 2003 we found a member of *Pseudobaeospora* in the Nature Reserve of Staré jezero (Třeboňská pánev Basin, Southern Bohemia). Our specimen consists of only one basidiocarp (Fig. 1). It represents the first find of the genus *Pseudobaeospora* in the Czech Republic.

## MATERIAL AND METHODS

The macrocharacters were observed in fresh material. Colours of basidiocarps were compared with Kornerup and Wanscher (1978) and expressed by symbols in parentheses. The microcharacters were mainly observed in dried material using a light microscope with oil immersion lens. Fragments of lamellae, stipe and pileipellis were examined in 5 % KOH, Melzer's reagent, and a solution of Congo Red in ammonia (1 ml of 25 % ammonia dissolved in a filtrated solution of 1.5 g Congo Red and 50 ml distilled water). Values of microcharacters were estimated as 5 and 95 percentiles of 30 measurements. Spore size refers to thick-walled dextrinoid spores only. The abbreviations of herbaria are cited in accordance with the Index Herbariorum (Holmgren et al. 1990).

## DESCRIPTION

***Pseudobaeospora* sp.**

Pileus 4.5 mm wide, hemisphaerical, umbonate, with 1-1.5 mm long marginal striation, when wet dark violet-brown (10F4), when dry greyish brown with violet tint (paler than 10D3), surface smooth, dry and matt. Stipe 20 × 0.6 mm, cylindrical, violet-brown (10E4-10F5), smooth, with whitish rhizoids at base. Lamellae sparse, L = 11, l = 0-1, ± 1 mm wide, adnexed, violet-brown (concolorous with stipe), with even, concolorous edge. Context more or less concolorous with surface, without specific smell, turning brownish-yellowish in 5 % KOH.

Basidia 2-spored, 16.5-25 × 3.5-5.5 µm, narrowly clavate; a few thick-walled and dextrinoid. Spores 4-4.9 × 3.3-4 µm (av. 4.3 × 3.6 µm), Q = 1.08-1.29 (av. Q = 1.21), ellipsoid, hyaline, smooth, thick-walled, dextrinoid. Cheilocystidia 21-33 × 2.5-6 µm, versiform: moliniform, clavate, cylindrical or fusiform, often with lateral nodules or finger-like projections. Caulocystidia 16-31 × 3-4 µm, cylindrical, narrowly clavate. Pileipellis yellowish-brownish in KOH, made up of a narrow suprapellis of slender hyphae with terminal cells 10.5-40 × 3-8.5 µm, cylindrical, occasionally also narrowly lageniform or narrowly clavate, over a seemingly pseudoparenchymatic subpellis of 9-24 µm thick hyphae. Clamp-connections absent from all parts of the basidiocarp.

Specimen examined: Czech Republic, Třeboňská pánev Basin, Protected Landscape Area of Třeboňsko, Nature Reserve Staré jezero, alt. 440 m, 48°58'12" N, 14°53'31" W, in litter among *Molinia* sp. under *Alnus glutinosa*, 17 Oct. 2003, leg. S. Adamčík and S. Řípková (SAV).

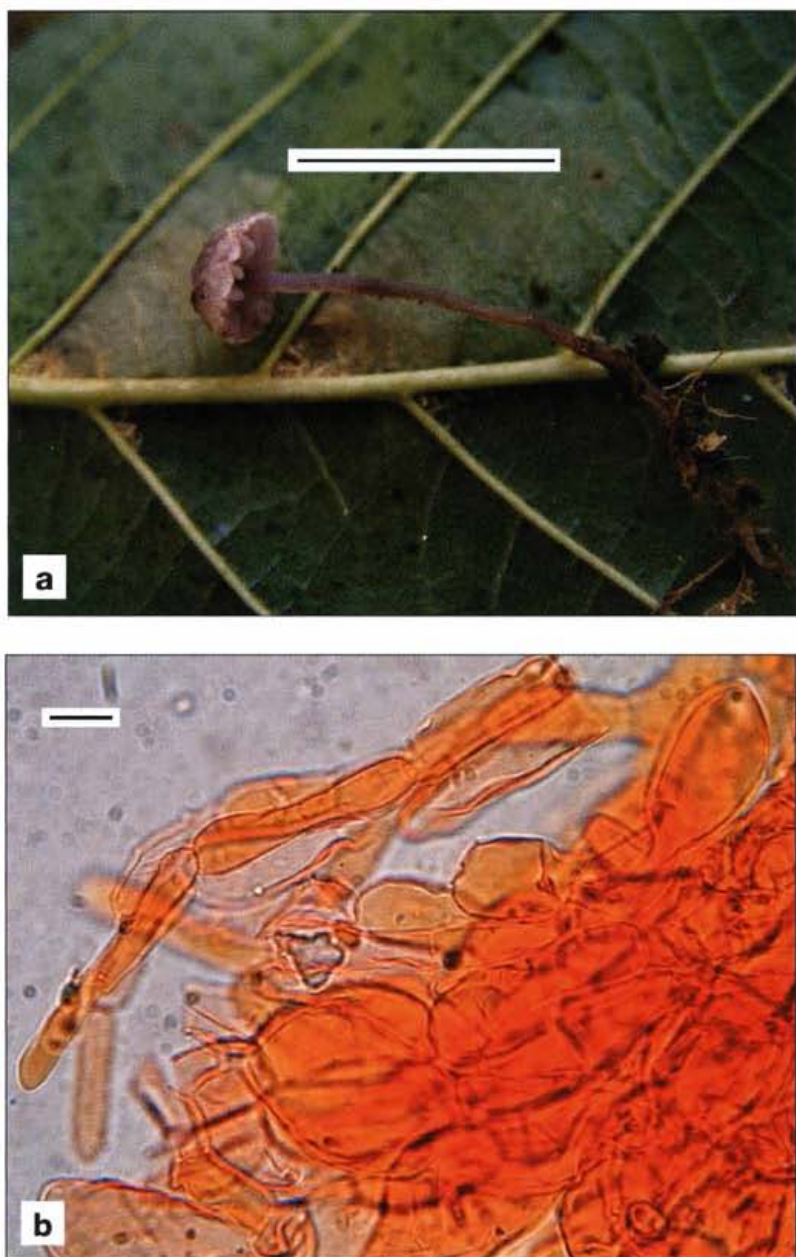


Fig. 1. *Pseudobaeospora* spec. – a: basidiocarp (scale bar = 10 mm, photo J. Holec), b: pileipellis (scale bar = 10  $\mu$ m).

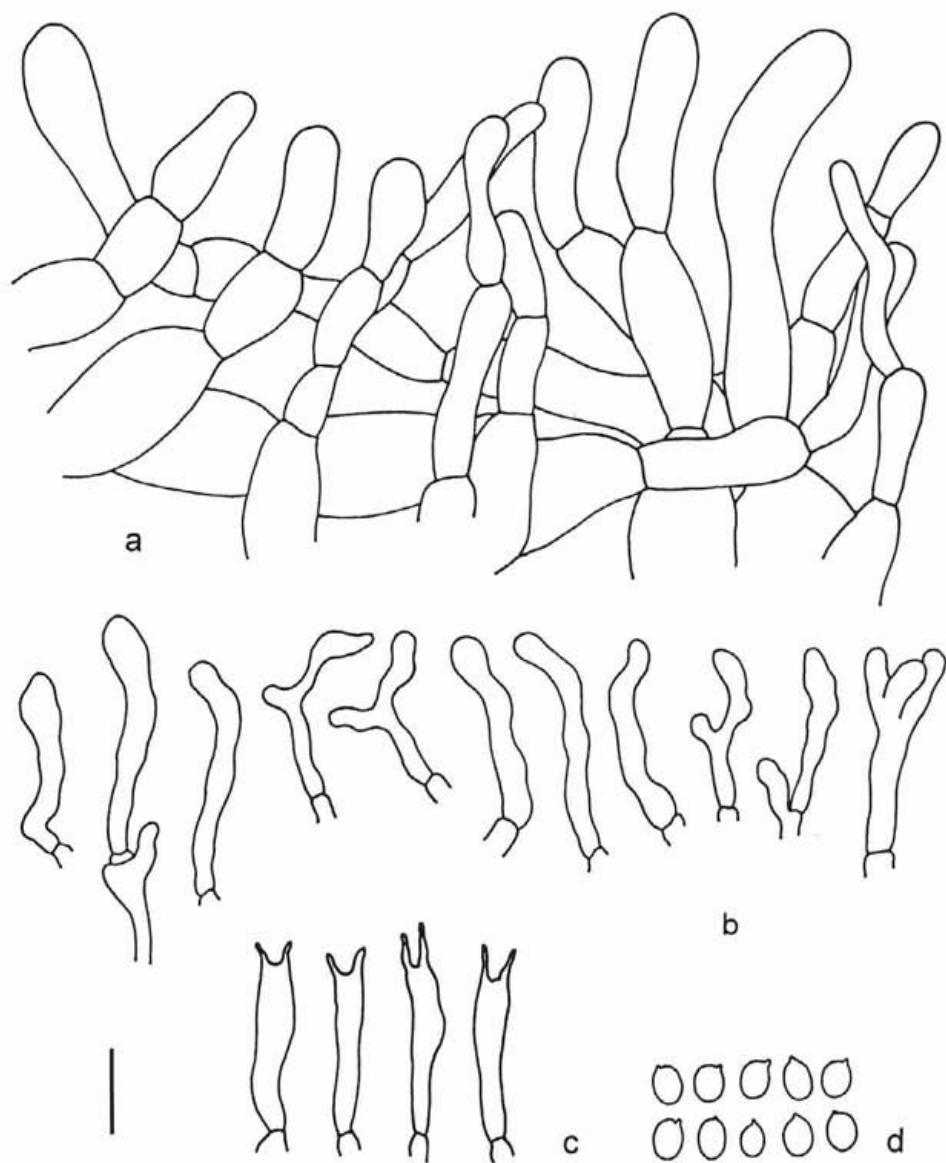


Fig. 2. *Pseudobacospora* spec. - a: pileipellis, b: cheilocystidia, c: basidia, d: spores (scale bar = 10  $\mu$ m).

## DISCUSSION

We have observed the following main characters of our *Pseudobaeospora* specimen: 2-spored basidia, absence of clamp-connections, presence of slender but distinct cheilocystidia, and a suprapellis of slender hyphae with distinct, cylindrical, occasionally also narrowly lageniform or narrowly clavate,  $\pm$  erect terminal cells. Only two of the fifteen hitherto known species of the genus *Pseudobaeospora* in Europe (Bas 2002, Bas 2003; Adamčík and Rípková 2004) do not have clamp-connections, viz. *P. oligophylla* (Singer) Singer and *P. pillodii* (Quélet) Wasser (Bas 2002).

We have compared our specimen with Singer's (Singer 1938) and Bas's (Bas 2003) descriptions of *P. oligophylla* and Wasser's (Wasser 1980) and Bas's (Bas 2003) descriptions of *P. pillodii* (Tab. 1). The original description of *P. pillodii* by Quélet (1890), which is very brief and does not allow a modern interpretation, has not been included in our comparison.

Our specimen differs from *P. oligophylla* and *P. pillodii* by the striate margin of the pileus and very sparse lamellae ( $L = 11$ ). Two-spored basidia have been observed only in *P. pillodii* and in our specimen. Bas (2003) noted that although specimens of *P. pillodii* have been found with 2-spored basidia only, nothing is gained by formally describing a 2-spored variety or forma, as specimens occur with 2- and 4-spored basidia sometimes even on one lamella.

The spores of our specimen are distinctly larger than those of *P. oligophylla*, but slightly overlap the extreme values of the spore size of *P. pillodii*.

Our specimen also differs in the presence of cheilocystidia. Only Singer (1938) noted very slender filiform cheilocystidia in *P. oligophylla*, but distinctly thinner ones than those of our specimen. The caulocystidia – not mentioned by Singer (1938) and Wasser (1980) – of our specimen do not differ from the caulocystidia observed by Bas (2003) in both species.

All specimens of both clampless species of *Pseudobaeospora* were found in mountain forests and subalpine forests (at 1200–1900 m alt.): *P. oligophylla* in association with *Larix sibirica*, *Pinus sibirica* and *Picea* sp., and *P. pillodii* in association with *Alnus viridis*, *A. incana*, *Abies*, *Larix*, *Pinus cembra* and *Rhododendron*. In contrast, we have found our specimen in basin in a hilly country (at 440 m alt.) in association with *Alnus glutinosa*.

Bas (2002, 2003) considers the structure of the pileipellis, the colour of the basidiocarp, chemical reaction of the pileipellis to KOH, and the presence or absence of clamp-connections as the main distinguishing characters in the genus. All three clampless taxa have basidiocarps with a rather similar coloration. The reaction to KOH has been observed only in our specimen and *P. pillodii* and is insignificant there. Consequently, the only character responsible for classifying our specimen is the pileipellis structure.

Tab. 1. Comparison of the specimen from the Czech Republic with selected published descriptions of clampless species of *Pseudobaeospora*.

	Adamčík and Ripková	Singer (1938)	Bas (2003)	Wasser (1980)	Bas (2003)
	our specimen	<i>P. oligophylla</i>	<i>P. oligophylla</i>	<i>P. pillodii</i>	<i>P. pillodii</i>
<b>Pileus</b>	margin striate	margin non-striate	margin non-striate	–	margin non-striate
<b>Lamellae</b>	L = 11, l = 0–1	–	L = ± 19, l = 3	–	L = 12–19(-30), l = 0–3
<b>Basidia</b>	2-spored	4-spored	4-spored	4-spored	4- and/or 2-spored
<b>Spores</b>	4–4.9 x 3.3–4 µm	3.2–3.4 x x 2.5–2.8 µm	3.4–3.9(-4.4) x x 2.8–3.5(-3.7) µm	3.2–4.5 x x 2.6–3.2 µm	(3.2-)3.7–4.5(-4.9) x x (2.6-)2.9–3.6 µm
<b>Cheilocystidia</b>	21–33 x 2.5–6 µm, moliniiform, clavate, cylindrical, fusiform, often with lateral nodules or finger-like projections	1.5–2 µm wide filiform	absent	absent	absent
<b>Pileipellis</b>	made up of suprapellis of slender hyphae with terminal cells 10.5–40 x x 3–8.5 µm, cylindrical, occasionally also narrowly lageniform or narrowly clavate, over a seemingly pseudoparenchymatic subpellis of 9–24 µm thick hyphae	made up of hyphae with terminal cells 20–26 x x 17–25 µm large, rarely erect, clavate, cylindrical, rarely globose, but mostly repent, filiform or catenuliform, 3–17 µm wide	made up of suprapellis of loosely arranged, 3.5–8.5 µm wide, radial hyphae, with abundant, repent to ascending, rarely erect pileocystidia 26–43 x 4.0–7.5 µm, cylindrical to sublageniform and subutriform, rather frequently subcapitate (apex 3.5–8.0 µm wide), over a subpellis of 9–18 µm wide, short-celled hyphae	–	made up of a distinct to rather indistinct suprapellis of 1.6–7.0(-10) µm wide radial hyphae, gradually passing into a subpellis of rather short- and broad-celled hyphae 15–40(-44) x x 8–28(-35) µm, rarely with a very few repent to slightly ascending, cystidioid terminal cells
<b>Ecology</b>	on litter among <i>Molinia</i> sp. under <i>Alnus glutinosa</i> , at 440 m alt.	among mosses under <i>Larix sibirica</i> and <i>Pinus sibirica</i> , at 1900 m alt.	on litter under <i>Picea</i> , at 1240 m alt.	under <i>Larix</i> , <i>Alnus viridis</i> , <i>Rhododendron</i>	on needle carpets under <i>Picea</i> , <i>Pinus cembra</i> , <i>Abies</i> , and <i>Larix</i> , on fallen branch of <i>Alnus viridis</i> in shrubbery, under <i>Alnus incana</i> , in felted turf of poor grassland, at up to 1700 m alt.

Our specimen is similar to Bas's (Bas 2003) description of *P. oligophylla* because of a suprapellis containing numerous repent to erect hyphal terminations (pileocystidia according to Bas). *P. pillodii* has, according to Bas (2003), also a suprapellis, but such hyphal terminations are scarce. Therefore our specimen cannot be identified as *P. pillodii*. Our specimen has the following characters which are different or slightly overlap those of *P. oligophylla*: (1) striate margin, (2) sparse lamellae ( $L = 11$ ), (3) 2-spored basidia, (4) larger spores, (5) presence of cheilocystidia and (6) habitat at lower altitude.

#### CONCLUSIONS

Our specimen consists of a single basidiocarp only. However, it is the first representative of the genus *Pseudobaeospora* in the Czech Republic and, moreover, it has a hitherto unknown combination of characters. Comparing our specimen with the two other clampless species, *P. oligophylla* and *P. pillodii*, we have not been able to identify it with either. Therefore we assume that it is a hitherto undescribed taxon, however, more finds are necessary for a formal description.

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