

**Phellinus cavicola, a new xanthochroic setae-less polypore
with coloured spores**

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A new *Phellinus* species, viz. *Phellinus cavicola* Kotl. et Pouzar (Hymenochaetaceae), is described. It is remarkable for its resupinate, perennial, rusty brown, tough carpophores, coloured spores and absence of setae. The new species is closely related to *Phellinus inermis* (Ellis et Everh.) G.H.Cunn. but differs by the much thicker carpophores, slightly smaller pores and somewhat shorter spores. Ecologically, it is interesting by its occurrence in the cavities of stumps of broad-leaved trees.

Key words: *Phellinus cavicola*, Hymenochaetaceae, polypores, Czech Republic and Bulgaria, taxonomy

Kotlaba F. a Pouzar Z. (1995): Ohňovec dutinový, nový xanthochroidní choroš bez set se zbarvenými výtrusy. – *Czech Mycol.* 48: 155–159

Popisuje se nový druh choroše ohňovec dutinový – *Phellinus cavicola* Kotl. et Pouzar (kožovkovité), který je charakteristický rozlitémi, vytrvalými, tuhými, rezavě hnědými plodnicemi, zbarvenými výtrusy a chyběním set. Ekologicky je zajímavý růstem v dutinách pařezů listnatých stromů. Je blíže příbuzný druhu *Phellinus inermis* (Ellis et Everh.) G.H.Cunn., od něhož se liší značně tlustšími plodnicemi, trochu menšími póry a poněkud kratšími výtrusy.

INTRODUCTION

The number of *Phellinus* species with coloured spores is extremely low in Europe but, in subtropical and tropical countries, these polypores occur in a much larger number of species. To our surprise, this polypore with coloured spores and without setae grows inside the hollow stump of a Norway maple in Průhonice park near Prague. When trying to identify this fungus, we soon came to the characteristic group of *Phellinus* around *Phellinus umbrinellus* (Bres.) Ryv. and *Phellinus inermis* (Ellis et Everh.) G.H.Cunn. As none of these species, however, appear to be identical with our polypore, we decided to describe it as new. In addition, whilst studying older herbarium material, we found in PRM a collection from Bulgaria, which exactly matched our specimens from Průhonice park in Bohemia.

Phellinus cavicola Kotlaba et Pouzar, spec. nov.

Description Carposoma resupinatum, dure lignosum, 10-30 cm longum et 9-15 mm crassum, perenne, multistratosum, margine 0,5-2 mm lato, levi, dilute

luteo usque albidoluteo, sericeo-nitidulo. Tubuli non-numquam valde obliqui, 2-16 mm longi, inconspicue stratosi, tabacino-ferrugineo-brunnei, poris 5-6 per 1 mm, rotundatis vel leviter polygonatis, dissepimentis olivaceo-ferrugineis, sicco ochraceo-ferrugineis, in statu recenti micantibus. Caro valde tenuis (usque 2 mm crassa), fibrillosa, dura, ferrugineo-brunnea. Inter substratum et carposomata stratum tenue, nigrum, durum repertum est. Odor saporque nulli. Pulvis sporarum ferrugineo-brunneus.

Systema hypharum dimiticum: hyphae generativae 1.5-2 μm latae, hyalinae, tenui-tunicatae, septatae, ramificatae; hyphae sceleticae 2-3 μm latae, crasse tunicatae, haud ramificatae, haud septatae, flavo-ferrugineae. Basidia breviter clavata, circa 12 μm longa et 5-6 μm lata, tetrasterigmatica, sterigmatibus fere rectis, tenuibus, brevibus (usque 4.5 μm longis). Sporae (4.5-)4.7-5.5 x (3.8-)4-4.5 μm , breviter ellipsoideae, pariete incrassato, levi, tabacino-ferrugineo.

Holotypus: Průhonice pr. Praha, Bohemia centr., in horto botanico "Průhonický park" dicto; *Acer platanoides*, in cavitate codicis, 12.IX. 1994, leg. F. Kotlaba, det. F. Kotlaba et Z. Pouzar (PRM 842924).

Carpophore resupinate, hard lignose, about 10-30 cm long and 9-15 mm thick, plane to very low pulvinate, perennial, continually stratified, with 0.5-2 mm wide, smooth, pale yellow to whitish yellowish, silky lustrous margin. Pores 5-6 per 1 mm, orbiculate or slightly polygonous, olive ferruginous when dried, ochraceous ferruginous and with lustrous reflex (glancing) when fresh. Tubes mostly very much oblique, 2-16 mm long, indistinctly stratified, without interstitial layers, snuff-ferruginous brown; old tubes sometimes filled with whitish to pale yellowish coloured tissue. Context very thin, at most 2 mm thick, fibrillose, hard, ferruginous brown. Between the carpophore and the wood, there is sometimes a thin, irregular black layer, which is horny, somewhat resinous and granular, lustrous in section. Smell and taste none. Spore print ferruginous brown.

Hyphal system dimitic: generative hyphae 1.5-2 μm wide, hyaline, thin-walled, ramified and septate; skeletal hyphae 2-3 μm wide, yellowish-ferruginous, thick-walled, unramified, aseptate. Basidia shortly clavate, cca 12 μm long, 5-4 μm broad, tetrasterigmatic, with narrow, straight, short sterigmata up to 4.5 μm long. Setae, setal hyphae or cystidia absent. Spores (4.5-)4.7-5.5(-5.7) x (3.8-)4-4.5 μm , shortly ellipsoid, with slightly thickened, smooth, tobacco-coloured walls.

The following species of fungi occurred on the stump of the Norway maple from which *Phellinus cavicola* was collected: *Bjerkandera adusta* (Bull.: Fr.) P.Karst., *Coprinus disseminatus* (Pers.: Fr.) S.F.Gray, *C. micaceus* (Bull.: Fr.) Fr., *Trametes gibbosa* (Pers.: Fr.) Fr. (carpophores of this polypore grew also in the upper part of the stump cavity, whereas *Phellinus cavicola* was situated in the lower part), *Trametes versicolor* (L.: Fr.) Pilát and *Stereum hirsutum* (Willd.: Fr.) Pers. - the exterior of the stump was nearly totally covered by carpophores of the above-mentioned fungi with *Phellinus cavicola* inside.



Fig. 1 *Phellinus cavicola*, part of the living carpophore. Průhonice Park, 2.5.1995. x 1.1. Photo F. Kotlaba.



Fig. 2 *Phellinus cavicola*, part of the dried carpophore. Průhonice Park, 16.3.1994. x 1.3. Photo F. Kotlaba.



Fig. 3 *Phellinus cavicola*, part of the dried carpophore showing also the black crust on its upper margin. Průhonice Park, 16.3.1994. x 2.5. Photo F. Kotlaba.

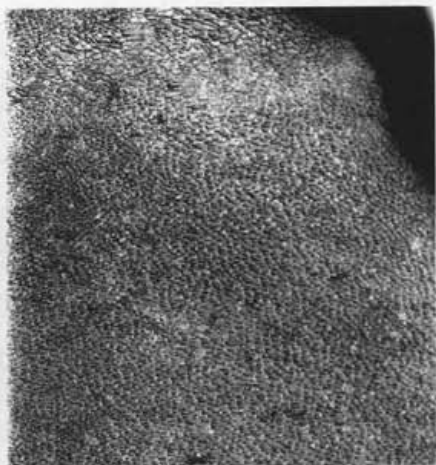


Fig. 4 *Phellinus cavicola*, pores of the dried carpophore. Průhonice Park, 16.3.1994. x 4.5. Photo F. Kotlaba.

SPECIMENS SEEN

Czech Republic, Central Bohemia, Průhonice near Prague, "Průhonický Park" (above alpinum), in a cavity within a stump of *Acer platanoides*, 16.III.1993 (PRM 883724), 8.III.1994 (PRM 883721), 16.III.1994 (PRM 882389), 28.VI.1994 (PRM 883723), 12.IX.1994 (PRM 842924 - holotype) 28.IX.1994 (PRM 883720 - also with spore print), 2.XI.1994 (PRM 883722) and 2.V.1995 (PRM 883740) ; all collected by F. Kotlaba, determined by F. Kotlaba and Z. Pouzar.

Bulgaria, SE costal area, National Park "Ropotamo" between Sozopol and Primorsko, within a stump of *Ulmus* sp., 7.VII.1975, leg. F. Kotlaba, det. F. Kotlaba and Z. Pouzar (PRM 816562)

DISCUSSION

Phellinus cavicola Kotl. et Pouzar is similar and closely related to *Phellinus umbrinellus* (Bres.) Ryv. which differs in its much thinner carpophores (up to 5 mm only), smaller pores (6-8 per 1 mm) and smaller spores (4-4.7 x 3-3.8 μ m). It is known mostly from tropical and subtropical North, Central and South America; with a single collection in England for Europe is published (Ryvarden 1994, Ryvarden and Gilbertson 1994).

Much closer allied appears to be *Phellinus inermis* (Ellis et Everh.) G.H.Cunn., which has also much thinner carpophores (up to 6 mm), slightly smaller pores (4-5 per 1 mm) and somewhat longer spores (5-6 x 4-4.5 μ m). This species is known from North and South America and New Zealand (Gilbertson and Ryvarden 1987).

In connection with the study of our new *Phellinus*, we examined type specimens of *P. inermis* from the Herbarium of the New York Botanic Garden (NY) and *P. umbrinellus* from Naturhistoriska Museum in Stockholm (S). As we accumulated some knowledge which could also be useful to other mycologists, our results are here appended.

Type specimen of *Poria umbrinella* Bres. (Hedwigia 35: 282, 1896) from Brazil, Santa Catharina, Blumenau, coll. Dr. Möller, no. 804 (S 93/162 - lectotype). Two thin irregularly elongated angular fragments of a completely resupinate carpophore measuring 4.5 x 1.4 cm and 3 x 0.9 cm, of the stag-brown or tobacco-brown colour with a yellowish tint, with 7 pores per 1 mm, polygonal-orbicular. Spores 4-4.5 x 3-3.7 μ m, shortly ellipsoid, smooth, thick-walled, pale yellowish brown. - The second specimen (S 94/217) is probably a duplicate (but not designated as the type). The two fragments of a carpophore are somewhat larger, measuring 3.6 x 3.2 x 2.8 cm and 3.9 x 2.5 cm with a natural margin which is narrow and glabrous, brown. Maximum thickness of a carpophore is 4 mm in one of the fragments. On some places we were able to observe 8 pores per 1 mm. The variability of the spores is here more representative: 3.5-4.7(-5.3) x 2.3-3.8 μ m; setae absent.

The type of *Poria inermis* Ellis et Everhart (Acad. Nat. Sci. Philadelphia Proc. 1894 : 322, 1894) is from the U.S.A., New Jersey, Newfield, coll. J. B. Ellis, New York Botanic Garden (NY – lectotype selected by J. L. Lowe, November 1965). It is one completely resupinate specimen of an irregularly elliptic shape, 7.5 x 2.8 cm, 3.5 mm thick, with the sterile, 0.5 mm wide, pale rusty margin; pores (3-)4-5 per 1 mm, subangular, on the side of carpophore completely opened, lustrous, ferruginous; context is 0.3-1, 5 mm thick, of a yellow-rusty colour. Old tubes are in some places filled with a white or yellowish hyphal felt. Spores (4.5-)5-5.5(-6) x (3.8-)4-4.2(-4.5) μm , shortly ovoid-ellipsoid, thick-walled, yellowish to pale rusty; setae none.

We were also able to study some further specimens of *Phellinus inermis* from the U.S.A. preserved in the herbarium of the Mycological Department of the National Museum in Prague (PRM), which were in complete agreement with the type (except that, in some places, a black, irregular, horny crust has developed between the substratum and the carpophore).

It is possible that the occurrence of *Phellinus cavicola* in cavities of tree stumps is only accidental and that this species may also be found outside cavities: on the grounds of only two collections, we cannot make any generalization on its ecology.

A c k n o w l e d g e m e n t s

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