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**A NEW *PACHYKYTOSPORA* SPECIES  
(*BASIDIOMYCOTA, POLYPORALES*)  
FROM ZHIGULI, EUROPEAN RUSSIA**

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*Key words: Basidiomycetes, Polyporales, broad-leaf forests, Pachykytospora wasseri, new species*

The genus *Pachykytospora* Kotl. et Pouzar [4] unites some prostrate pore fungi having *Polyporus*-like skeleto-binding hyphae and uneven ellipsoid basidiospores, which are characterized by rather longitudinal arrangements of the crests. The last feature as well as the basidiocarp resupinate trait distinctly mark the differences between the genus *Pachykytospora* from the closely related *Haploporus*, albeit some authors [1, 6] do not make these distinctions between the genera. According to many reasonable yet narrow concepts, the genus *Pachykytospora* includes nine species [1, 2, 5, 7] having south-temperate to tropical distribution. All of them are clearly distinguishable according to spore sizes, dextrinoid reaction of skeletals, anatomy of dissepiment edge, and some features of pore surface.

Being a key nemoral refugium, Zhiguli broadleaved forests (Samara Region, Russia) reveal many floristic novelties. In particular, there is an unusual fungus with sufficient *Pachykytospora* characteristics described here. This fungus is so unique that it certainly requires independent species status. Its detailed description and discussion are given below.

***Pachykytospora wasseri* Zmitr., V. Malysheva et Spirin sp. nov.** — see Figure.

Basidiomata annua, prostrata, late effusa (ad 10 cm diam.), fibrosa ad coriaceo-chartacea. Margo effusus, tenuis, sterilis ad fertilis, albidus ad flavido-ochraceus, gelatinescens. Hymenophorum tubulosum, leniter nodulosum, facies pororum albida ad cremea, deinde flavo-brunnescens, pori (1)2–4 per mm, irregulariter collocati, circulati ad subsinuosi, tenuitunicati. Subiculum 0.5–1 mm crassis, cremeum, fibrillosum. Tubuli obscure bistratosi, 2–5 mm longae, cremei ad ochracei.

Systema hypharum dimiticum. Hyphae ligativo-sceletales 2–2.6  $\mu\text{m}$  diam., leniter dextrinoideae cyanophilisae. Hyphae generatoriae fibulatae, hyalinae, 1.5–2.5  $\mu\text{m}$  in diametro. Basidia 13–24  $\times$  5–7.5  $\mu\text{m}$ , clavata, tetrasporifera, basi fibulata. Basidiosporae (7.8)8–9(10.4)  $\times$  3.9–5.2  $\mu\text{m}$  [Q = (1.5)1.7–1.9(2.7); Q<sub>m</sub> = 1.9],

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*Pachykytospora wasseri* (Holotypus).  
 A — basidiome outline from the pore surface (scale bar = 5 mm);  
 B — micromorphology details: 1 — basidioles, 2 — basidiospores, 3 — skeleto-binding hyphae, 4 — aleuria (scale bar = 10 μm)



ellipsoideae, leviter truncatae, lineariter tuberculosae, leniter dextrinoideae, cyanophilaе. Aleuria adsunt in trama, fusioidea ad brevicylindracea, 12–25 × 3–6 μm, guttulata.

**Holotypus:** Russia, Samara Reg., Stavropol Dist., Zhiguli Nat. Res., *Padus avium*, 12.09.2006, V.F. Malysheva, E.F. Malysheva, I.V. Zmitrovich, Isotypus — LE 214872.

Basidiomata annual, prostrate, largely effused along bark (up to 10 cm in diam.), fibrous to coriaceous or cretaceous. Margin effuse, thin, firstly sterile, white, later fertile, with lemon to ochraceous tints, slightly gelatinized. Pore surface uneven, weakly nodulose, firstly white with creamish stains, then cream with gelatinized bright-yellow (or lemon-yellow) patches; pores (1)2–4 per mm, of irregular shape, round to slightly sinuous and open in oblique positions, rather thin-walled. Section: subiculum 0.5–1 mm thick, pale cream, fibrous; tubes indistinctly two-layered (both layers are of the same season; growing layer was slightly turned due to fall of trunk), 2–5 mm thick, cream to yellowish-ochraceous, partly agglutinated. Odor absent; taste bitter (reminiscent of *Oligoporus stipticus*).

Hyphal system dimitic. Skeleto-binding hyphae dominating in all parts of basidiocarp, thick-walled, yellowish in IKI, weakly cyanophilous, 2–2.6 μm wide, tightly interwoven in subiculum, and densely packed in tube trama. Generative hyphae clamped, hyaline, 1.5–2.5 μm wide. Basidia 13–24 × 5–7.5 μm, clavate, 4-spored, fibulate at the base. Basidiospores (7.8)8–9(10.4) × 3.9–5.2 μm [Q = (1.5)1.7–1.9(2.7); Q<sub>m</sub> = 1.9 — see table 1], ellipsoid, indistinctly to clearly truncate, minutely rough due to tuberculate exospore with linear arrangement of tubercles, hyaline with irregular oil-drops, weakly dextrinoid, strongly cyanophilous. Aleuria generating in tube trama, fusoid to barrel-shaped, 12–25 × 3–6 μm, guttulate.

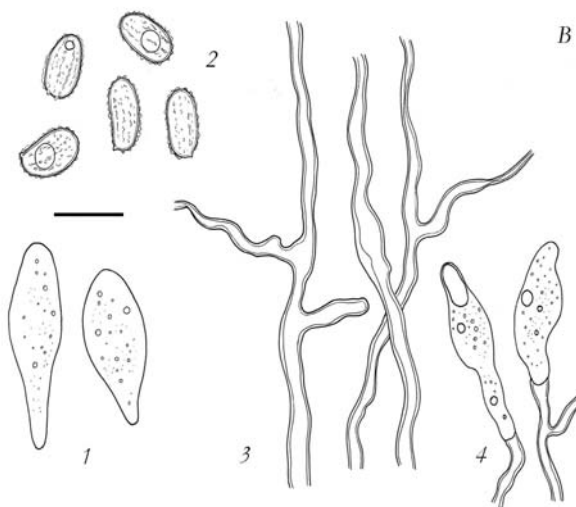


Table 1. Spore variability of *Pachykytospora wasseri*

L × W	Q	L × W	Q	L × W	Q
9.5 × 5.5	1.7	8 × 3.9	2.1	9.1 × 4.9	1.9
10.3 × 5.5	1.9	7.8 × 4.9	1.6	8 × 3.4	2.4
9 × 5.7	1.6	8.3 × 3.4	2.4	9.9 × 4.9	2.0
10.3 × 5.3	1.9	7.8 × 4.7	1.7	9.1 × 4.2	2.2
8.6 × 5.5	1.6	7.8 × 5.2	1.5	7.8 × 3.4	2.3
10 × 5.5	1.8	9.9 × 5.2	1.9	10.4 × 3.9	2.7
9.5 × 5.5	1.7	7.8 × 3.6	2.2	8.3 × 5.2	1.6
9 × 5.6	1.6	10.4 × 4.7	2.2	8 × 4.9	1.6
8.6 × 5.5	1.6	9.6 × 3.9	2.5	8.3 × 3.9	2.1
10.4 × 5.2	2.0	7.8 × 4.2	1.9	8 × 5.2	1.5

Note: L — spore length, W — spore wide, Q — spore quotient ( $Q = L / W$ )

**Etymology.** The species epithet is given in honor of the great connoisseur of agaricoid and ganodermoid fungi, Prof. Solomon P. Wasser, on his 60<sup>th</sup> birthday.

**Affinities.** The closest relatives of newly described species are *Pachykytospora tuberculosa* and *P. subtrametea*. However, there are clear differences between mentioned species as well (table 2). *P. wasseri* has pores sufficiently larger than in *P. subtrametea*, but they are appreciably finer than the pores in *P. tuberculosa* (the pores exceed 1 mm wide in many cases). Similarly to *P. tuberculosa*, a new species is characterized by dextrinoid skeletal (albeit coloration is paler); however, its spore sizes and basidiome consistency sharply differ from those of *P. tuberculosa*. The spore characteristics of *P. wasseri* are closer to those of *P. subtrametea*, but the spores of *P. wasseri* have steadily larger spore quotients, i.e., they are longer on their longitudinal axes. Moreover, the spores of *P. wasseri* are slightly dextrinoid — this feature was not mentioned for *P. subtrametea* [5].

**Discussion.** The analysis of distribution of the *Pachykytospora* species shows a certain disjunction between European quercicolous *P. tuberculosa* and Asian

Table 2. Comparison of characters in species of *Pachykytospora* concerned

Diagnostical features	<i>P. tuberculosa</i>	<i>P. wasseri</i>	<i>P. subtrametea</i>
Basidiome consistency	suberose	coriaceous	coriaceous
Pores per 1 mm	0.4—2	1—4	3—5
Dextrinoid reaction of skeletal	strong	fine	absent
Spore dimensions, $\mu\text{m}$	(9)10—14 × 4.6—7.0	(7.8)8—9(10.4) × 3.9—5.2	(7.9)8.1—10.5(11) × (4.5)5—6.3(7)
$Q_m$	1.89	1.90	1.68
Substrata	<i>Quercus</i> , rarely <i>Castanea</i> , <i>Crataegus</i> , <i>Malus</i> , <i>Fagus</i>	<i>Padus avium</i>	<i>Padus asiatica</i> , <i>Salix sp.</i> , <i>Tilia amurensis</i>

*P. subtrametea*. The only known locality of *P. wasseri* is near the eastern distribution limits of *P. tuberculosa* (southern Urals) and outside of the westernmost boundaries of the *P. subtrametea* areal (West Siberia). Only a little could be said on ecology of *P. wasseri*. Evidently, it is comparable in its preferences with its sib *P. subtrametea*, preferring shadowy broadleaved forests, where it occupies drying and just fallen trunks and thick branches of deciduous wood. Like other *Pachykytospora* species, *P. wasseri* is a white-rot fungus causing intensive decay of adjacent wood.

**Additional material examined.** *Pachykytospora alabamae* (Berk. et Cooke) Ryvarden — H.W. Ravenel, Fungi Americani Exsiccati, Georgia, Florida, S. Carolina, LE 30759; Georgia, St. Simons Island, on hardwood shrub, 04.08.1950, J.L. Lowe, LE 210073.

*P. papyracea* (Schwein.) Ryvarden — H.W. Ravenel, Fungi Americani Exsiccati, Georgia, Florida, S. Carolina, LE 30822.

*P. tuberculosa* (Fr.) Kotlaba et Pouzar — Stockholm, Djurgarden, on the underside of dead, still-attached branches of live *Quercus robur*, 28.01.1894, L. Romell, LE 31873; Ukraine, Crimea, «Crimsky reserve», on fallen *Q. robur*, 09.09.1937, A. Bondartsev, LE 31872, LE 31881; Ibid., on fallen *Q. pubescens*, 01.09.1956, L. Vassilieva, A. Bondartsev, LE 31885; Ukraine, Zakarpatye, on fallen *Fagus sylvatica*, 11.08.1956, E. Parmasto, LE 31883; Hungari, Prencow, on *Quercus* sp., 18.09.1897, A. Kmet, A. Bondartsev, LE 208305; Belarus, «Belovezhskaya pushcha» reserve, on trunks of *Q. robur*, 10.09.1966, M. Bondartseva, P. Mikhalevich, LE 31887, LE 31886; Aserbaijan, on dry branches of *Tilia* sp., 1949, G. Ibrahimov, A. Bondartsev, LE 31879.

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**НОВИЙ ВИД РОДУ *PACHYKYTOSPORA* (BASIDIOMYCOTA, POLYPORALES) ІЗ ЖИГУЛІВ (ЄВРОПЕЙСЬКА РОСІЯ)**

Описано новий вид роду *Pachykytospora* — *P. wasserii*, знайдений у тіньових широколистяних лісах Жигулів (Росія, Самарська обл.). Обговорюються подібності і відмінності *P. wasserii* з близькими видами роду. Також дається бібліографія з роду *Pachykytospora*.

*Ключові слова:* Basidiomycetes Polyporales, широколистяні ліси, *Pachykytospora wasserii*, новий вид

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*Ключевые слова:* Basidiomycetes Polyporales, широколиственные леса, *Pachykytospora wasserii*, новый вид