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Notes on some rare polypores, found in Russia. I: Genera Antrodiella, Gelatoporia, Irpex, Oxyporus, Pilatoporus, and Porpomyces

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Antrodiella americana Ryvarden & Gilb., *A. faginea* Vampola & Pouzar, *A. farinacea* Vampola & Pouzar, *A. foliaceodentata* (Nikol.) Gilb. & Ryvarden, and *A. incrustans* (Berk. & M.A. Curtis ex Cooke) Ryvarden are discussed and illustrated. *Antrodiella farinacea* and *A. incrustans* are published as new to Russia; *Gloeoporus amorphus* (Fr.) Clem. & Shear var. *vassilkovii* Bondartsev is confirmed as a synonym of the latter. A key to the species of *Antrodiella* known from European Russia is provided. Distribution and substrates of *Gelatoporia subvermispora* (Pilát) Niemelä in European Russia are given. *Gelatoporia griseoincarnata* Spirin & Zmitrovich, spec. nov. is described as a wide-spored sib of *G. pannocincta* (Romell) Niemelä. Extremely rare *Irpex semisupiniformis* (Murrill) Saarenoksa & Kotiranta (= *Junghuhnia semisupiniforme* (Murrill) Ryvarden) is indicated as new to Russia; it is described and illustrated. On *Populus suaveolens* growing *Oxyporus schizoporoides* Zmitrovich & Spirin spec. nov. belongs to *Oxyporus corticola*-complex, but has wider spores than the North-American *O. similis* (Bres.) Ryvarden. *Coriolus epileucus* (Fr.) sensu Bondartsev is *Pilatoporus ibericus* (Melo & Ryvarden) Kotl. & Pouzar, species new to Russia. The genus *Porpomyces* Jülich is discussed, and two new combinations, *Porpomyces albonigrescens* (Núñez, Parmasto & Ryvarden) Spirin & Zmitrovich and *Porpomyces balaenae* (Niemelä) Spirin & Zmitrovich, are proposed. The latter is found in North-West Russia for the first time.

Key words: Aphyllophorales, Basidiomycetes, European Russia, polypores, rare species

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Introduction

The polypore flora of European Russia is not very well known. Like the other groups of *Aphyllophorales*, polyporoid fungi are listed and studied in maximal entirety only in Leningrad Region and partly in Russian Karelia (Bondartseva et al. 1999, Zmitrovich 1999, Lindgren 2001, Niemelä et al. 2001); at the same time the information from other regions is very scanty. Not long ago we begun a critical restudy of material in Herbarium of Komarov Botanical Institute (St.-Petersburg, Russia, LE) to specify the data of distribution of aphyllophoroid fungi, especially polypores. This study was supplied with excursions in a field (Zmitrovich & Spirin 2002b, 2003). Moreover, after description

of four new species of corticioid and polyporoid macromycetes (Zmitrovich 2001, Zmitrovich & Spirin 2002a, Spirin 2002b, 2003b) it is obvious that many surprises are waiting for mycologists in forests of West Russia. At the moment it became evidently that some species evaluated earlier as threatened or vulnerable, have a wide distribution in suburban woods and parks (Zmitrovich 1997, Spirin 2002a). This paper presents some results of study of some type materials (LE) and specimens collected not only in old-growth forests in Leningrad and Nizhny Novgorod regions, but also in urban forests of two large cities (St.-Petersburg and Nizhny Novgorod).

Materials and methods

The microscopic characters of polypores were observed with microscope Karl Zeiss-amplival. The chemical reagents used in the microscopic examination are 5% solution of potassium hydroxide (KOH), Melzer's reagent (IKI) and Cotton Blue (CB). The measurements have been made with immersion objective; total of 30 spores from each specimens were measured. For presenting a variation of spore size, 5% of measurements have been excluded from each end of the range, and are given in parentheses.

Discussions

Antrodiella Ryvarden & Johans., Preliminary Polypore Flora of East Africa: 256, 1980.

Type species: *Polyporus semisupinus* Berk. & M.A. Curtis, Grevillea **1**: 50, 1872 (= *Antrodiella semisupina* (Berk. & M.A. Curtis) Ryvarden, op. cit., p. 261).

In this paper the genus is accepted following to circumscription by Dai and Niemelä (1997).

Antrodiella americana Ryvarden & Gilb., Mycotaxon **19**: 138, 1984. – Fig. 1.

Basidiocarps annual, resupinate, small, firstly white and hygrophanous-waxy, later pale straw-colored and soft-corky, up to 1 mm thick. Margin inconspicuous. Pores angular to sinuose, (2) 3–4 per mm, with thin lacerate dissepiments. Context very thin to indistinct, concolorous with tube layer.

Hyphal system dimitic. Skeletals 2.5–3 μm in diam., rarely branched, with distinct wide lumina, CB+. Generative hyphae thin- to moderately thick-walled, with regular clamps, 2.5–5 μm wide. In subhymenium occur the large concretions of crystals. Gloeocystidia present in the bottom of tubes, 30–60 × 6–8 μm, and at the dissepiment edges, 30–50 × 4–8 μm, often with inflated apex. Basidia clavate, with oil-rich content, 12–16 × 4–5 μm. Spores oblong-ellipsoid, (3) 3.2–3.8 (4.3) × (1.8) 2–2.4 (2.5) μm, IKI and CB–.

On wood of *Quercus robur*.

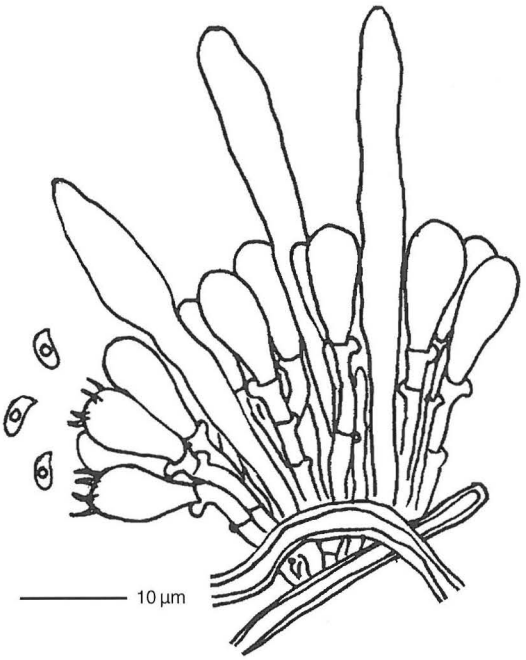

Fig. 1. *Antrodiella americana* (LE 208264): hymenium and spores.

Two specimens, identified as *A. americana*, were collected from wood of oak immediately. In contrast, most other European specimens were found on dead basidiocarps of *Hymenochaete tabacina* (Sowerby : Fr.) Lév. (Niemelä et al. 1995). Probably, the substrate was previously decomposed by another species of *Hymenochaete*, common on fallen trunks of *Quercus robur*, – *H. rubiginosa* (Dicks. : Fr.) Lév.

The descriptions of cystidial elements, observed in hymenium of *A. americana*, are very different. In North-American polypore flora Gilbertson and Ryvarden (1986) noted that they may found 'club-like' elements, which were called by Lowe as 'cystidia', only at the dissepiment edges. But these authors (Ryvarden & Gilbertson 1993) referred that *A. americana* has tubular gloeocystidia in the bottom of tubes, and those are difficult to observe. Dai and Niemelä (1997) ob-

served 'lots of gloeocystidia' in hymenium of Chinese collections of *A. americana*. We saw cystidial elements in dissepimental fragments of tubes and in their lower parts. All these observations may suggest an idea that *A. americana* is the complex of some sibling species, differing from each other by the substrate preferences (dead fruitbodies of *Hymenochaete* sp. or naked wood), the abundance and the shape of cystidial elements, the size of pores and the measurements of spores. However, this hypothesis is needed in verification (especially with use of ITS-sequencing).

Specimens examined: **Russia.** Nizhny Novgorod City, oak-forest in Botanical Garden of Nizhny Novgorod University, fallen branch of *Quercus robur*, together with *Athelia sibirica*, 29.X.2000 *W. Spirin* (LE 212204). Nizhny Novgorod region, Bor district, reserve "Kerzhensky", fallen trunk of *Quercus robur*, 6.X.2002 *E. Zhukoff* (LE 208264).

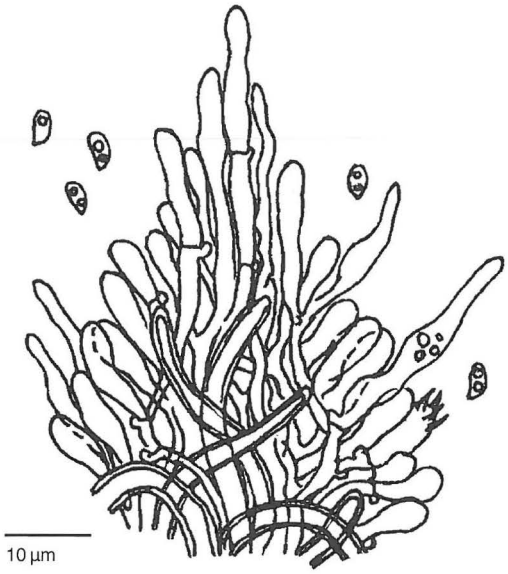

Fig. 2. *Antrodiella faginea* (LE 213088): section through the dissepiment edge.

Antrodiella faginea Vampola & Pouzar, Česká Mykol. **49** (1): 25, 1996. – Fig. 2.

Basidiocarps annual, small, sessile, pileate or fan-shaped with narrowed base, often in imbricate groups, sometimes effused-reflexed to totally resupinate. Pilei projecting in most cases on few millimeters only, 0.5–1 mm thick. Pileal surface whitish to amber-yellow, even, naked or slightly warted, in older specimens covering with very thin honey- to amber-yellow cuticle. Margin acute, often agglutinated and reddish-brown. Context white to straw-coloured, fibrillose, 0.5–1 mm thick. Tubes straw-colored to brownish, 1–2 mm thick, with thin dissepiments. Pores (4) 5–8 per mm, roundish to angular or moderately lacerate.

Hyphal system dimitic. Skeletals thick-walled, moderately branched in context, 2–5 µm wide, CB+. Generative hyphae thin- to slightly thick-walled, clamped, 2–3.5 µm wide. Trama irregular. Gloeocystidia mostly present, varying in shape – clavate, moniliform or lageniform, with oily content, 16–35 × 4–6 µm. Basidia clavate, four-spored, 9–14 × 4–5 µm. Spores ellipsoid, uni- or biguttulate, (3.5) 3.6–4.2 (4.3) × (2) 2.2–2.4 (2.5) µm, IKI and CB– .

On wood of *Alnus glutinosa, Betula pubescens, Carpinus betulus, Fagus sylvatica, Padus avium, Populus tremula, Quercus cerris, Q. robur, Salix alba, S. caprea, S. cinerea,* sometimes on dead basidiocarps of polypores.

This species was separated from its closest relative *A. semisupina* by Vampola and Pouzar (1996). In original description the basidiocarps of *A. faginea* were characterized as "effused-reflexed to resupinate" and "macroscopically identical to those of *A. semisupina*". The main difference between these species, found by Vampola and Pouzar, is the presence of gloeocystidial elements. Later some Fennoscandian authors (Johannesson et al. 2000, Niemelä 2001) added such peculiarity as the growth with some species of *Phellinus* s.l. (e.g. *Fomitiporia punctata* (P. Karst.) Murrill, *Phellinus tremulae* (Bondartsev) Bondartsev et Borissov, or *Porodaedalea conchata* (Pers. : Fr.) Fiasson et Niemelä) for identification of *A. faginea*. The main predecessor of *A. semisupina* s.str. is *Fomes fomentarius* (L. : Fr.) Fr. (Niemelä et al. 1995).

Kotiranta (in Niemelä et al. 1995) discussed variability of the basidiocarps and the spores in so called *A. semisupina*-complex and marked that in Central Finland specimens of *A. semisupina* s.l. "became more and more effused and ellipsoid-spored". Probably, these specimens belong to *A. faginea*. We studied about 20 specimens of this species and observed some variations unknown earlier. The specimens, corresponding to original

description by Vampola and Pouzar (1996), were collected from wood of *Fagus, Quercus* and *Alnus* (LE 32579, LE 212214, LE 213088). Any association with the other polypores was not observed. These specimens is characterized by relatively large irregular pores 4–6 per mm and strong tendency to effused growth. Their spores is 2.2–2.5 µm wide, and dissepiment edges consist only from generative hyphae, though the hyphal system of tubes and context is clearly dimitic. Well developed pilei have thin amber-coloured crust and strongly agglutinated margin; pore surface is ochraceous to brownish. Gloeocystidia are common in hymenium of young fruitbodies and rare to absent in older ones. Probably, such older specimens with few gloeocystidia are mentioned as *A. semisupina* by Breitenbach and Kränzlin (1988), Dai and Niemelä (1997).

The specimens, collected mostly from dead wood of *Populus* and *Salix* in northern areas, were observed often on dead basidiocarps of some *Phellinus*-species, or in neighbourhood with these ones (LE 209917, LE 210173, LE 211366, LE 213598, LE 214701, LE 214703; LE 213263– on birch). Basidiocarps are strictly resupinate or, very rarely, with nodulose, poorly developed pilei. Margin is initially pruinose, later well demarcated and partly separable from the substrate, white to straw-colored. Pore surface firstly pure white, shining, then with clear, but not bright ochraceous tints; pores are roundish to moderately angular, small, with thin dissepiments, 6–8 per mm. Tubes are more or less certainly agglutinated. Narrowly ellipsoid spores 2–2.2 µm wide, very few and inconspicuous, mostly clavate gloeocystidia, and monomitic structure of young basidiomata, composed by sclerified generative (pseudoskeletal) hyphae (like those of *A. ussurii* – see Dai & Niemelä 1997), are very characteristic as micromorphological features. Numbered unique characters could be a base to describe a new species with evidently boreal distribution. But the molecular data testify against this possibility: according to Johannesson et al. (2000), material, collected in North Europe, are conspecific with a type specimen of *A. faginea* and some other Central-European specimens from beech. The specimen LE 214701 was collected from typical substrate of *Antrodiella americana*: this was wood of *Salix cinerea*, decayed by *Hymenochaete tabacina*. However, this specimen has smaller pores (7–8 per mm) than *A. americana*, and microscopically it is identical to the other specimens of *A. faginea*, grown on wood of *Salicaceae*. Vampola and Pouzar (1996) wrote that the growth of *A. americana* on wood decayed by *H. tabacina* is not exclusive character of this species; they mentioned the specimens of *A. genistae* (Bourdot & Galzin) David, *A. romellii* (Donk) Niemelä and *A. semisupina* s. str., collected by them from dead basidiocarps of *Hymenochaete*-species.

Third group are the specimens collected from fallen branches of birch in southern *Betuletum aegopodioso-caricosum (pilosae)*-type forests (LE 212283, LE 212284, LE 212285). The fruitbodies are spathulate or infundibuliform, with narrowed, stip-shaped base, strongly splitting into the blades, without any tendency to effused growth. The margin of young fruitbodies is relatively wide and sterile, not agglutinated. The basidiocarps are initially pure white, later with ochraceous tints; their consistency is very hard-corky. General habit resembles young *Oligoporus floriformis* (Quèl. in Bres.) Gilb. & Ryvarden, or even *O. balsameus* (Peck) Gilb. & Ryvarden. Pores are very small, 7–9 per mm, roundish (slightly lacerate and sinuous only close to the base). Rare, but prominent gloeocystidia (up to 35 µm long) were observed in hymenium; spores have measurements 3–3.6 × 2.2–2.5 µm. Probably, these specimens belong to separate undescribed species. We plan to return to this problem in additional studying of the other specimens from southern parts of European Russia.

Specimens examined: *Antrodiella faginea*. **Russia.** St. Petersburg, Obukhovo, dead *Salix caprea*, together with *Daedaleopsis confragosa*, 23.IX.2003 *W. Spirin* (LE 214703). Leningrad region, Zelenogorsk, dead *Salix cinerea*, together with *Hymenochaete tabacina*, 5.VIII.2003 *W. Spirin* (LE 214701). Karelia, Sortavala district, Tolvojarvi forestry, fallen *Populus tremula*, 14.IX.2000 *V. Lositskaja* (LE 210173); Pudozh district, Besov Nos, dead *Populus tremula*, together with *Phellinus tremulae*, 25.VIII.2002 *W. Spirin* (LE 214704). Komi Republic, reserve "Petchoro-Ilychsky", fallen branch of *Betula pubescens*, 1.VIII.1999, *D. Kosolapov* (LE 213263). Krasnodar region, Caucasian reserve, fallen branch of *Fagus sylvatica*, 3.VIII.1936 *L. Vassiljeva* (LE 32579). Nizhny Novgorod region, Arzamas district, reserve "Pustynsky", dead *Salix caprea*, 26.VII.2000 *W. Spirin* (LE 212678); Bor district, reserve "Kerzhensky", dead *Alnus glutinosa*, 26.IX.1998 *W. Spirin* (LE 213088); Varnavino district, Varvazh, fallen branch of *Populus tremula*, 21.VIII.1999 *W. Spirin* (LE 213598); Lukojanov district, forestry "Razinskoje", fallen branches of *Betula pubescens*, together with *Irpex nitidus*, 26–27.VII.1998 *W. Spirin* (LE 212283, LE 212284, LE

212285); Lukojanov district, Panzelka forestry, dead *Fomitiporia punctata,* grown on *Salix alba*, 6.IX.2001 *W. Spirin* (LE 211366); Nizhny Novgorod City, Botanical Garden of Nizhny Novgorod University, *Quercus robur*, 3.VIII.2001 *W. Spirin* (LE 212214). Tatarstan, Raifa, fallen branches of *Betula pubescens*, 2.IX.1943 *N. Vasilevsky* (LE 27405). **Finland.** Reserve "North Karelia", *Populus tremula,* 30.VIII.1995 *V. Lositskaja* (LE 209917). – *Antrodiella semisupina.* **Russia.** Moscow region, Pushkinsky district, fallen *Betula sp.* 27.VIII.1940, *A. Bondartsev* (LE 26396). Nizhny Novgorod region, Lukojanov district, forestry "Panzelskoje", dead *Fomes fomentarius*, grown on *Populus tremula*, 5.VIII.2000 *W. Spirin* (LE 212685); Tonkino district, reserve "Tonkinsky", dead *Fomes fomentarius*, grown on *Betula pubescens, Populus tremula* and *Salix caprea*, 22.VIII.2000 *W. Spirin* (LE 212672, LE 212673, LE 212689). Sharanga district, reserve "Kilemarsky", *Betula pubescens*, 25.VIII.2000 *W. Spirin* (LE 212687). St.Petersburg, Botanical Garden of Komarov Botanical Institute, *Syringa josikaea*, 13.VII.2003 *I. Zmitrovich & W. Spirin* (LE 214702). Tver' region, Nelidovo district, Central Forest Reserve, dead *Fomes fomentarius*, grown on *Betula sp.,* and wood of *Populus tremula* and *Sorbus aucuparia*, 7.VIII.1976, 9–11.IX.1976 *M. Bondartseva & S. Herrera* (LE 32520, LE 27380, LE 27382, LE 27383).

Antrodiella farinacea Vampola & Pouzar, Česká Mykol. **49** (1): 29, 1996. – Fig. 3.

Basidiocarps effused-reflexed, with small imbricate pilei 2–3 mm wide and 1 mm thick, whitish with ochraceous or greyish tints. Pileal surface naked, pale straw-colored. Pileal margin sharp, whitish to clearly ochraceous-brown. Margin of resupinate parts well delimited, white. Context very thin, white. Tube layer up to 1 mm thick, pale straw-colored. Tube surface whitish, or lightly greyish to ochraceous. Pores small, with thin entire dissepiments, 6–7 per mm.

Hyphal system dimitic. Skeletals 2.5–3.5 μm wide in subhymenium, 3–7 μm in context, thick-walled, sometimes with crystalline encrustation, rarely branched and bearing of adventive septa or clamps, CB+. Generative hyphae thin- to moderately thick-walled, fibulate, 2–4.5 μm wide. Cystidia absent. Basidia clavate, four-spored, 10–12 × 4–4.5 μm. Spores (3) 3.4–3.7 (4) × (1.6) 1.7–1.9 (2.1) μm, lacrymoid, clearly tapering to the apiculus, sometimes guttulate, IKI and CB– .

On wood of *Ulmus*. New to Russia.

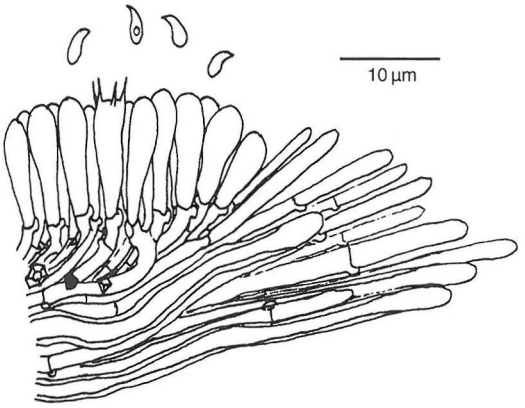

Fig. 3. *Antrodiella farinacea* (LE 211262): hymenium and spores.

Johannesson et al. (2000) proposed to regard this species as a latter heterotypic synonym of *A. semisupina*. Their conclusion based on both morphological and molecular data. They have not found lacrymoid shape of spores to be an essential feature of *A. farinacea*. Our specimen is close to very young *A. hoehnelii* (Bres.) Niemelä. However, this specimen has spores distinctly tapering to the apiculus, and more delicate structure of subhymenium (*A. hoehnelii* is characterized by subhymenial skeletals up to 7 μm wide). Probably, more clear concepts of these species will be established after new molecular tests with an additional material.

Specimens examined: Antrodiella farinacea. **Russia.** Nizhny Novgorod region, Semjonov district, reserve "Kerzhensky", *Ulmus laevis*, 10.X.1999 *W. Spirin* (LE 211262). – *Antrodiella hoehnelii.* Nizhny Novgorod region, Bor district, reserve "Kerzhensky", *Populus tremula*, 28.IX.1998 *W. Spirin* (LE 213167).

Antrodiella foliaceodentata (Nikol.) Gilb. & Ryvarden in Ryvarden & Gilb., Synopsis Fungorum **6**: 153, 1993. – *Irpex foliaceodentatus* Nikol., 1949. – Fig. 4.

Basidiocarps pileate or effused-reflexed, often in large imbricate groups and fused together, juvenile white, with dirty-straw tint when mature or dry. Pileal surface radially fibrillose to hispid, with few uncertain slightly darker concentric zones. Margin acute, in some cases upturned after drying, brownish. Context white or almost so, soft-corky, fibrillose, 1–3 mm thick. Hymenophore irpi-

coid, having the shape of sharp thorns or lacerate lamellae with anastomosing bases 3–10 mm long, whitish to straw-colored.

Hyphal system trimitic. Skeletals 3.5–6 μm wide in subhymenium, 5–10 μm wide in context, with rare adventive septae, thick-walled, rarely branched, CB+, protruding hymenium at the dissepiment edges as naked pseudocystidia. Binding hyphae present in context, 3–7 μm wide, dichotomously branched, thick-walled with distinct lumina. Generative hyphae 2.5–4 μm wide, thin- to slightly thick-walled, present mostly in subhymenium, extremely rare in context, clamped. Gloeopleroid hyphae abundant in subhymenium, 3–6 μm wide, with oily yellowish content, protruding hymenium as gloeocystidia. Basidia 12–18 × 3.5–4.5 μm, narrowly clavate. Spores curved, cylindrical to clearly faseoliform, in certain projections slightly amygdaloid, (3) 3.1–4.9 (5.2) × (1.8) 1.9–2.5 (2.8) μm, hyaline, sometimes with two apical guttulae, IKI and CB–.

On fallen trunks of *Fagus* and *Quercus*.

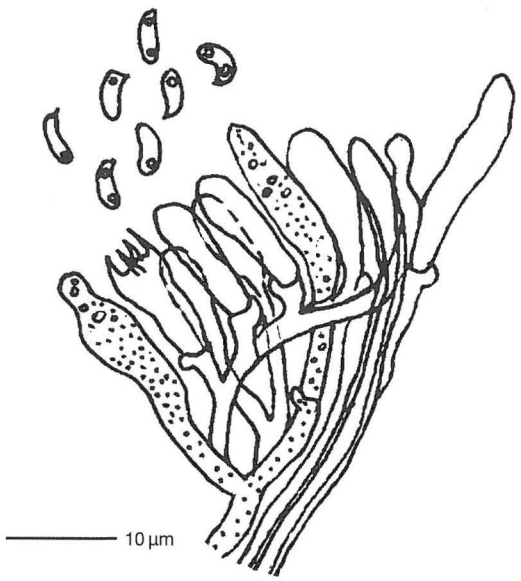

Fig. 4. *Antrodiella foliaceodentata* (LE 210855): hymenium with pseudo- and gloeocystidia.

Ryvarden and Gilbertson (1993) gave slightly confusing spore measurements to this species (3–4 × 1–1.5 μm). The spores of both Russian and Polish (see Domański et al. 1973) specimens are longer and wider. In our opinion, the microscopic structures (especially the shape of spores) are reminiscent those of *Skeletocutis lenis* (P. Karst.) Niemelä. On the other hand, Domański (op. cit.) compared *Antrodiella foliaceodentata* with *Trametes hoehnelii* (Bres.) Pilát. Probably, these both species may be placed into one genus together with *Skeletocutis lenis*. An alternative position could be the enlargement of the genus *Antrodiella*, with inclusion of *Skeletocutis lenis*-complex (Zmitrovich 2003).

Specimens examined: **Russia.** Krasnodar region, Caucasian State Reserve, *Fagus sylvatica*, 24.VIII.1936 *T. Nikolajeva* (LE 22480, type). Nizhny Novgorod region, Vetluga district, reserve "Ispravnikova Duga", *Quercus robur*, 19.VIII.1999 *W. Spirin* (LE 210855).

Antrodiella incrustans (Berk. & M.A. Curtis ex Cooke) Ryvarden, Mycotaxon **13**: 344, 1984. – *Polyporus incrustans* Berk. & M.A. Curtis ex Cooke, 1878; *Poria distorta* Murrill, 1920; *Gloeoporus amorphus* (Fr.) Clem. & Shear var. *vassilkovii* Bondartsev, Bot. Mat. Otd. Spor. Rast. **5**: 19, 1940. – Fig. 5.

Basidiocarps annual, effused-reflexed with very wide resupinate parts. Pilei small, fleshy-fibrous, ceraceous after drying, thin (up to 0.2 cm thick), imbricate. Pileal surface cream- to pale ochraceous-brown colored, radially fibrillose to smooth, indistinctly zonate. Margin sharp. Context very thin, resinous, ochraceous-brown. Pore surface pale isabelline to ochraceous; pores 4–7 per mm.

Hyphal system dimitic. Skeletals 2.5–4 μm wide in distiller water, 3–8 μm wide in KOH, swelling and dissolving in alkalis solution, CB+. Generative hyphae thin-walled, with clamps, 2.5–3 μm wide, present mostly in tubes. Cystidia absent. Basidia 10–12 × 4–5 μm. Spores ellipsoid, (4.6) 4.9–5.4 (5.6) × (3) 3.2–3.4 (3.5) μm, hyaline, IKI–, CB–.

On hardwoods, rarely on gymnosperms (Gilbertson & Ryvarden 1986).

New to Russia.

Specimen examined: **Russia.** Mari-El Republic, Sushinskoje, *Betula pubescens* and dead basidiocarps of *Daedaleopsis confragosa*, VIII.1936 *B. Vassilkov*, (LE 22451, type of *Gloeoporus amorphus* var. *vassilkovii*).

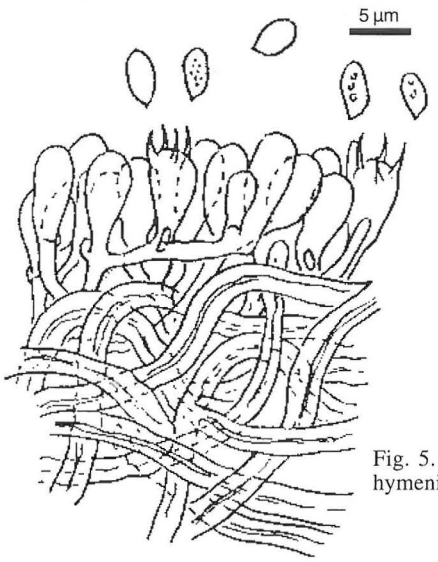

Fig. 5. *Antrodiella incrustans* (LE 22451): hymenium and trama.

Originally described from Mari-El Republic (Bondartsev 1940), *Gloeoporus amorphus* (Fr.) Clem. & Shear var. *vassilkovii* Bondarstev is mentioned from some regions of European Russia and Estonia (Bondartseva 1998). Vassilkov's specimen fits very well with the description of *Antrodiella incrustans* (Gilbertson & Ryvarden 1986). Other three specimens from Russia belong to *Antrodiella semisupina* (Moscow region, see above), *Oligoporus cerifluus* (Berk. & M.A. Curtis) Gilb. & Ryvarden (Mordovia, on *Picea abies*), and *O. balsameus* (Peck) Gilb. & Ryvarden (Nizhny Novgorod region, on *Betula sp.*).

KEY TO THE SPECIES OF Antrodiella, FOUND IN EUROPEAN RUSSIA

1. Hymenial cystidia present 2
(1). Cystidia absent or present as pseudo- or gloeocystidia of tramal origin 4
2. On fallen spruce trunks decayed by *Trichaptum abietinum*. Gloeocystidia indistinct. Subhymenial hyphae partly agglutinated. Spores 3.5–4.3 × 2.6–3 µm ..... *A. parasitica*
(2). On hardwoods. Gloeocystidia often well developed 3
3. Basidiocarps pileate, effused-reflexed to resupinate. Pores 2–4 per mm. Gloeocystidia up to 35 µm long. Spores 3.6–4.2 × 2.2–2.4 µm ..... *A. faginea* s.l.
(3). Basidiocarps always resupinate. Pores 4–8 mm. Gloeocystidia more than 35 µm long. Spores 3.2–4 × 2–2.4 µm ..... *A. americana* s.l.
4. Hymenophore irpicoid. Pseudo- and gloeocystidia of tramal origin present. Spores 3.1–4.9 × 1.9–2.5 µm ..... *A. foliaceodentata*
(4). Hymenophore truly poroid. Cystidial elements always absent 5
5. Clamps absent. Basidiocarps effused-reflexed. Spores 3.8–4 × 1.5–1.8 µm ..... *A. onychoides*
(5). Clamps present. Basidiocarps effused-reflexed or resupinate 6
6. Basidiocarps effused; if effused-reflexed, then with well developed rhizhomorphs 7
(6). Basidiocarps effused-reflexed 9
7. On debris. Margin rhizomorphic. Spores 3.5–4.2 × 2–2.6 µm ..... *A. wynnei*
(7). On wood. Margin without rhizomorphs 8
8. On hardwoods. Spores 3.4–4 × 2.2–2.8 µm ..... *A. romellii*
(8). On spruce or dead *Fomitopsis pinicola*. Spores 2.9–3.5 × 2.1–2.8 µm ..... *A. citrinella*
9. Upper surface warted or tufted. On wood decayed by *Inonotus radiatus*. Spores curved, 3.3–4.2 × 1.5–1.9 µm ..... *A. hoehnelii*
(9). Upper surface smooth or slightly velutinate 10
10. Spores 4.9–5.4 × 3.2–3.4 µm. Skeletals dissolving in KOH ..... *A. incrustans*
(10). Spores smaller. Skeletals unchanging in KOH 11
11. On gymnosperms, together with *Trichaptum spp.* Spores 3.2–3.8 × 1.9–2.2 µm ..... *A. pallasii*
(11). On angiosperms 12
12. Mostly on *Alnus, Betula,* or *Salix,* decayed by *Fomes fomentarius*. Spores 3.3–4.2 × 1.7–2 µm, not lacrymoid ..... *A. semisupina*
(12). On *Ulmus*. Spores 3.4–4 × 1.6–2.1 µm, lacrymoid ..... *A. farinacea*

Gelatoporia Niemelä, Karstenia **25**: 22, 1985.

Type species: *Poria subvermispora* Pilát, Stud. Bot. Cech. **3**: 2, 1940 (= *Gelatoporia subvermispora* (Pilát) Niemelä, see below).

Other species: *G. pannocincta* (Romell) Niemelä, Karstenia **25**: 22, 1985; *G. griseoincarnata* Spirin & Zmitrovich (see below).

The genus is accepted following to original description by Niemelä (1985).

Gelatoporia subvermispora (Pilát) Niemelä, Karstenia **25**: 22, 1985. – *Poria subvermispora* Pilát, 1940; *Poria notata* Overh., 1942; *Poria quercuum* Baxter, 1949. – Fig. 6.

Basidiocarps annual, resupinate, effused, easily separable from substrate, soft-waxy when fresh, fragile and slightly ceraceous when dry, about 0.3 cm thick. Margin white, initially byssoid, later fibrillose or indistinct in old specimens. Tube layer white to pale isabelline, faintly reddish-brown when bruised, often slightly darker than subiculum. Pores angular to lacerate, 2–3 (4) per mm, dissepiments thin. Subiculum white, ca. 1 mm thick, with resinous layer, which is seen as a thin "black line" with the naked eye.

Tube trama monomitic; generative hyphae thin- to moderately thick-walled, with regular clamps, 3.5–5 µm wide. Subiculum is composed by the network of thick-walled moderately branched sclerified hyphae with regular clamps, 4.5–8 µm wide. Cystidia absent. Basidia narrowly clavate, four-spored, 12–18 × 4–4.5 µm. Spores allantoid to narrowly cylindrical, (4.8) 5.1–6 (6.2) × 1–1.2 (1.4) µm, IKI– and CB–.

On wood of coniferous and deciduous trees. First record in Russia is from Karelia (Siitonen et al. 2001), second from Russian Far East (Núñez et al. 2001).

In Europe this species occurs mostly on fallen trunks of *Abies alba* and *Picea abies*, rarely on *Prunus padus, Quercus robur* and *Salix caprea* (Erkkilä & Niemelä 1986, Renvall et al. 1991, Vampola & Vlasák 1992, Ryvarden & Gilbertson 1993, Hansen & Knudsen 1997). In European Russia the species is also known on *Betula pubescens, Pinus sylvestris, Prunus padus, Quercus robur,* and *Tilia cordata.*

Specimens examined: **Russia.** Leningrad region, Nizhne-Svirsky reserve, *Betula pubescens*, 16.IX.1996 *I. Zmitrovich* (LE 208263). Nizhny Novgorod region, Lukojanov district, forestry "Razinskoje", *Tilia cordata*, 11.VII.1998 *W. Spirin* (LE 212279); Arzamas district, reserve "Pustynsky", *Pinus sylvestris*, 9.VII.2000 *W. Spirin* (LE 212676); Bor district, reserve "Kerzhensky", *Quercus robur*, 2.X.2002 *E. Zhukoff* (LE 208265). Nizhny Novgorod City, oak-forest in Botanical Garden of Nizhny Novgorod University, *Quercus robur*, 3.VIII.2001 *W. Spirin* (LE 212203). **Finland.** Pohjois-Karjala, Joensuu, Aavaranta, *Prunus padus*, 8.VIII.1980 *T. Niemelä 2006* (H, dupl. in LE).

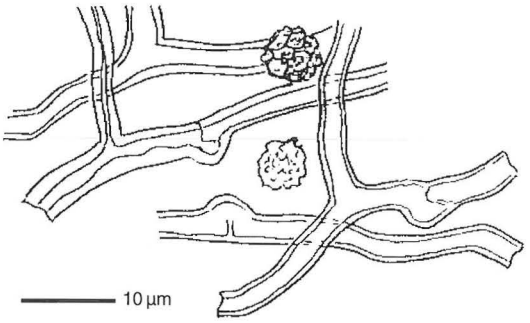

Fig. 6. *Gelatoporia subvermispora* (LE 208263): subicular hyphae with crystalline concretions.

Gelatoporia griseoincarnata Spirin & Zmitrovich spec. nov. – Fig. 7.

Basidiomata annua, resupinata, effusa, matrice soluta, leniter viscosa ad cornescens, ad 0.2 cm crass. Margo albidus, fibrillosus. Hymenophorum tubulosum, viscosum. Porae 3–4 per mm, circulare-angulatae. Systema hypharum monomiticum. Hyphae tramaticae 3–4.5 µm latae versus hyphae subicularis 4–7 µm. Leptocystidia phialoidea vel clavata, 20–26 × 4–7.5 µm. Basidia cylindraceo-clavata, 14–20 × 4–4.5 µm, tetrasporifera. Sporae cylindraceae, curvae, (4.2) 4.4–5.4 (5.6) × 1.2–1.6 (1.8) µm, inamyloideae, indextrinoidae, acyanophilae.

Basidiocarps annual, resupinate, effused, loosely attached to the substrate, soft and waxy when fresh, fragile when dry, up to 0.2 cm thick. Margin white, initially wide, fibrillose, later narrow but distinct. Subiculum white, ca. 1 mm thick. Tube layer very short, up to 1 mm thick, cream to pale ochraceous with rose tint, darker than subiculum. Pores roundish to angular, 3–4 per mm, dissepiments thin, with sugary pruina.

Tube trama monomitic; generative hyphae thin- to moderately thick-walled, with regular clamps, 3–4.5 µm wide. Subiculum is composed by the network of thick-walled moderately branched sclerified hyphae with regular clamps, 4–7 µm wide. Cystidia (leptocystidia) present, often bottle-

shaped, or hyphoid and then inflated at the tips, 20–26 × 4–7.5 μm. Hyphae at the tube edges inflated up to 8 μm wide and sometimes encrusted. Basidia narrowly clavate, four-spored, 14–20 × 4–4.5 μm. Spores cylindrical, distinctly bent, (4.2) 4.4–5.4 (5.6) × 1.2–1.6 (1.8) μm, IKI–, CB–. On fallen trunk of spruce and adjacent debris. Known only from the type locality.

Type: **Russia.** Nizhny Novgorod region, Arzamas district, reserve "Pustynsky", *Picea abies*, 9.VII.1999 *W. Spirin* (LE 213688).

The new species is closely related to *G. pannocincta.* Both species have the spores shorter than in *G. subvermispora*, which do not exceed 6 μm at the length. The spores of *G. griseoincarnata* are distinctly thicker, however. Yellowish substance between subhymenial hyphae is the important feature of *G. pannocincta*; this character is not observed in *G. griseoincarnata.* Moreover, macroscopically *G. pannocincta* is easily identified by its abrupt, well delimited margin, and very small pores (7–8 per mm); a dark line is seen into the context under the lens. *G. griseoincarnata* has clearly fibrillose margin, their pores are larger, and the subiculum is homogeneous.

It is necessary to emphasize such feature of the new species as the inflated hyphae at the dissepiment edges. *G. griseoincarnata* shares this character with some other species. These inflations are very common at the dissepiment edges of *G. subvermispora.* DomaDski (1969), Vampola and Vlasák (1992) illustrated these hyphae and the crystalline incrustation on them; this feature is mentioned by Ryvarden and Gilbertson (1993), too. Eriksson (1958) gave the picture and the description of 'fusiform, somewhat inflated', but not encrusted hyphal ends at the dissepiment edges of *G. pannocincta.* DomaDski et al. (1973) observed similar structures in hymenium of *Gloeoporus dichrous* (Fr.) Bres., and called them 'cheilocystidia'. Probably, the latter species could be combined into *Gelatoporia*, and the new concept of this genus would be established. The type species of *Gloeoporus* – *G. thelephoroides* (Hook.) G. Cunn. – differs from *G. dichrous* by its infundibuliform basidiocarps, efibulate hyphae, merulioid hymenophore and continuous hymenium (Parmasto 1969, Ryvarden & Gilbertson 1993), and comes close to the genera *Meruliopsis* Bondartsev in Parmasto and *Ceriporia* Donk.

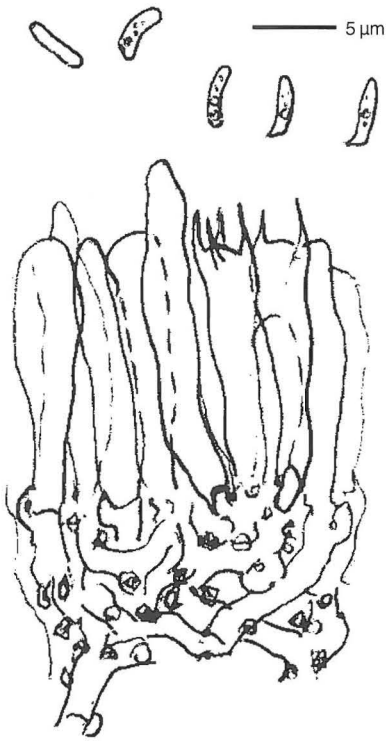

Fig. 7. *Gelatoporia griseoincarnata* Spirin & Zmitrovich (LE 213688): hymenium and spores.

Other specimens examined: *Gelatoporia pannocincta.* **Russia.** Nizhny Novgorod region, Lukojanov district, reserve "Panzelka pond and the pine forests in its surroundings", *Betula pubescens*, together with *Botryobasidium pruinatum*, 20.VII.1999 *W. Spirin* (LE 212355); Bogorodsk district, *Betula pubescens* and adjacent debris, 18.VIII.1998 *W. Spirin* (LE 211224).

Irpex Fr. : Fr., Elench. Fung. **1**: 142, 1828. – *Steccherinum* Gray, 1821. – *Junghuhnia* Corda, 1842.

Type species: *Hydnum lacteum* Fr. : Fr., Syst. Mycol. **1**: 412, 1821 (= *Irpex lacteus* (Fr. : Fr.) Fr., ibid., p. 145).

Vesterholt (in Knudsen & Hansen 1996) included the poroid genus *Junghuhnia* Corda emend. Ryvarden into *Steccherinum* and proposed combinations for the species known in Nordic countries. Recently Kotiranta and Saarenoksa (2002) combined some poroid-hydnoid genera like *Flavodon* Ryvarden, *Flaviporus* Murrill, *Junghuhnia* and *Steccherinum* into *Irpex* Fr. : Fr.; in such a wide sense the genus *Irpex* is treated in this paper.

Irpex semisupiniformis (Murrill) Saarenoksa & Kotiranta in Kotiranta & Saarenoksa, Polish Bot. Journal **47**: 106, 2002. – *Tyromyces semisupiniformis* Murrill, 1912; *Tyromyces pseudohoehnelii* Bondartsev & Komarova, 1959. – Fig. 8.

Basidiocarps annual, effused-reflexed, soft-corky. Pilei up to 0.8 cm long, up to 0.3 cm thick, solitary or in imbricate groups. Pileal surface pinkish-yellow, with radial streaks in some specimens, or glabrous to semitranslucent. Margin sharp, often reddish-brown. Pore straw- to reddish-brown. Pores angular to sinuous, with thin dissepiments, 4–6 per mm. Tube layer 0.1–0.2 cm thick, fragile, slightly darker than context. Margin of effused part well developed, easily separable from substrate.

Hyphal system dimitic. Skeletal hyphae thick-walled, CB+, 3–5.5 μm in diam., protruding hymenium and bearing encrusted skeletocystidia 80–150 × 7–10 μm (also on pileal surface), swelling and sometimes dissolving in KOH. Generative hyphae with clamps, 2–3.5 μm in diam. All tramal hyphae have faint, but certain reaction with IKI (slightly amyloid). Basidia clavate, with slightly narrowed base, 16–24 × 4.5–6.5 μm, four-spored. Spores broadly-ellipsoid, (3.4) 3.6–4.8 (5) × (2.2) 2.5–3.4 (3.6) μm, IKI–, CB–.

On fallen trunk of aspen, in old broad-leaved forests.

New to Russia. In Europe known also from Italy (Ginns & Bernicchia 1984, Ryvarden & Gilbertson 1993) and Belarus (Komarova 1959, as *Tyromyces pseudohoehnelii*). From its closest relative *I. pseudozilingianus* (Parmasto) Saarenoksa & Kotiranta this species differs by its longer basidia and broadly-ellipsoid spores. Moreover, *I. pseudozilingianus* grows on wood decayed by *Phellinus tremulae, Fomitiporia punctata* or *Inonotus radiatus* (Sowerby : Fr.) P. Karst. (Niemelä et al. 1995); these substrate preferences is unknown to *I. semisupiniformis.*

Type specimen of *Tyromyces pseudohoehnelii* fits very well with description by Ryvarden and Gilbertson (1993), and resembles *Antrodiella semisupina* macroscopically. Two specimens from Russia are close to *Antrodiella hoehnelii* (Bres.) Niemelä with its habit, and could be belonging to separate sibling species. We could not found essential difference in spore dimensions between type of *T. pseudohoehnelii* and Russian specimens. The latter ones are thicker (2–3 mm thick) than Belorussian specimen (ca. 1 mm thick), and have reddish-brown colouration. Pileal cuticle is composed by agglutinated, sometimes encrusted skeletals in specimen of *T. pseudohoehnelii*, and by arboriform, bearing of pileal cystidia, not agglutinated skeletal hyphae in our specimens (Fig. 8b).

Specimens examined: *Tyromyces pseudohoehnelii.* **Belarus.** Gomel' region, Turov district, *Populus tremula*, 28.VIII.1958 *E. Komarova* (MSK 3636, type). – *Junghuhnia semisupiniforme.* **Russia.** Nizhny Novgorod region, Lukojanov district, forestry "Razinskoje", *Populus tremula*, together with *Hyphoderma mutatum*, 24.IX.2000 and 6.X.2001 *W. Spirin* (LE 210099, LE 211383). – *Junghuhnia pseudozilingiana.* **Russia.** Nizhny Novgorod region, Lukojanov district, forestry "Panzelskoje", *Populus tremula*, 6.X.2001 *W. Spirin* (LE 211382).

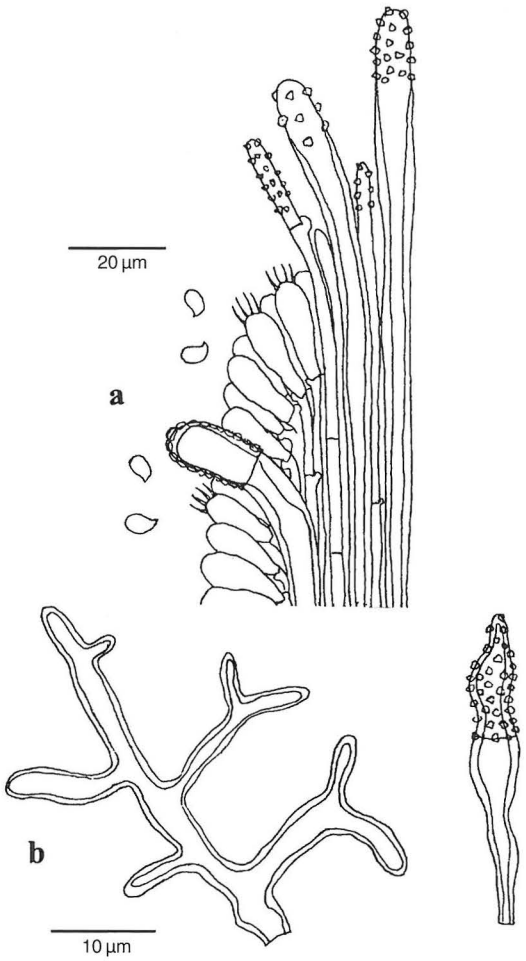

Fig. 8. *Irpex semisupiniformis* (LE 210099): a – hymenium and spores, b – hyphae and pseudocystidia from pileal surface.

Oxyporus (Bourdot & Galzin) Donk, Medd. Bot. Mus. Univ. Utrecht **9:** 202, 1933.

Type species: *Polyporus connatus* Weinm., Hymen.: 332, 1836 (= *Oxyporus populinus* (Schumach. : Fr.) Donk, ibid.: 204).

We consider *Oxyporus* distinct from *Rigidoporus* Murrill, since the basidia are more prolonged and hyphae narrower than in *Rigidoporus*. Like *Schizopora*, *Oxyporus* have unperforated parenthosomata, why both genera are compared with *Hymenochaetales* (Langer 1994, 1998, Keller 1997, Kirk et al. 2002, Wagner & Fischer 2002). All the boreal resupinate *Oxyporus* species seem to be rather species complexes than 'good' species, because many intermediates exist within the species. In this connection we think it is possible to describe the new species.

Oxyporus schizoporoides Zmitrovich & Spirin spec. nov.
– Fig. 9, 10.

Basidiomata perennia, resupinato-nodulosa, molliter coriacea, ad 0.3 cm crassa, initio orbiculata, confluentia, ad 50 cm in diam. Pseudopilei muscigeni adsunt. Medulla cremea ad lignicolor, ad 0.1 cm crassa. Hymenophorum tubulosum, durum. Porae 5–6 per mm, angulato-laceratae.

Caro e hyphis crassitunicatis (sed septatis) 2.5–3.5 mm crassis composita. Cystidia adsunt, fusoidea vel phialoidea, 16–17.5 × 3.5–4.8 mm. Basidia breviclavata, 15.2–16.8 × 4.5–5.5 mm, efibulata. Sporae lato ellipsoideae vel subglobosae, 4.2–4.9 (5.1) × (2.8) 3–4 mm, guttulatae, tenuitunicatae, laeves, acyanophilae.

Basidiocarps perennial, resupinate nodulose, soft-corky, up 3 mm thick, orbicular, confluent, up to 50 cm in extent. True pilei absent, but pseudopilei with overmossed surface are developing on vertical substrates. Context creamish to woody colored, floccose, up to 1 mm thick. Tube layer white to cream-coloured, of tough consistency, up to 0.2 cm thick. Pore surface concolorous with the tube layer, pale ochraceous when dry, pores (4) 5–6 (7) per mm, more or less angular, in some places distinctly lacerate.

Hyphal system may formally be regarded as monomitic, but subicular hyphae are rarely branched at right angles, and have rather narrow lumina and diameter (2.5–3 mm wide); and therefore it could be interpreted better as pseudodimitic. Tramal hyphae very densely packed, 2.5–3.5 mm wide, efibulate, regularly branched, with conspicuous walls, encrusted with subglobose crystalline concretions. Cystidia enclosed to slightly projecting, 16–17.5 × 3.5–4.8 mm, fusoid to bottle-shaped, thin-walled, usually with apical globose incrustation. Basidia 15.2–16.8 × 4.5–5.5 mm, short clavate, four-spored, efibulate. Spores 4.2–4.9 (5.1) × (2.8) 3–4 mm, broadly ellipsoid to subglobose, with oil-rich content, smooth, thin-walled, IKI–, CB+.

On drying *Populus suaveolens* in suburban park; widely distributed in type locality.

Type: **Russia.** St. Petersburg, Rzhevka, *Populus suaveolens*, 14.VI.2000 *I. Zmitrovich* (LE 208262).

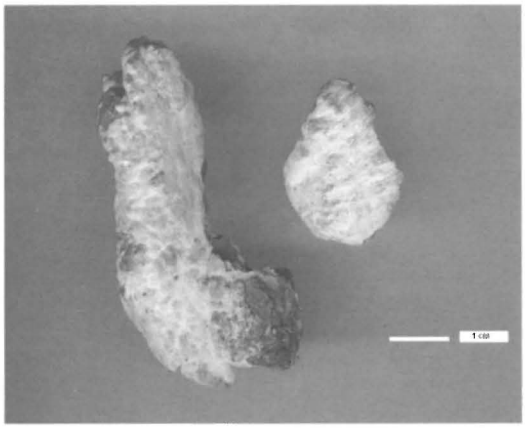

Fig. 9. *Oxyporus schizoporoides* Zmitrovich & Spirin (LE 208262): basidiocarps.

Undoubtedly, our new species belongs to *Oxyporus corticola*-complex, in the wide sense by Vampola (1992), and in which species have 2–5 pores per mm. The closest relative is the North-American *O. similis* (Bres.) Ryvarden, although subglobose or broadly ellipsoid spores of *O. schizoporoides* is reminiscent these of *O. populinus* (Schumach. : Fr.) Donk, which also has the same pore sizes, and may also grow as moss-covered nodulae. However, the spores of the latter are smaller (ca. 3.5–4.2 × 3–3.9 mm) and distinctly subglobose. Subicular hyphae of *O. schizoporoides* are highly characteristic; they resemble these of *Schizopora*-species. *Oxyporus obducens* is similar to the new species too, but has slightly larger pores and an obligate chlamydosporic state. The distinctions of *O. schizoporoides* from *O. corticola, O. similis* and *O. obducens* are summarized in Table 1.

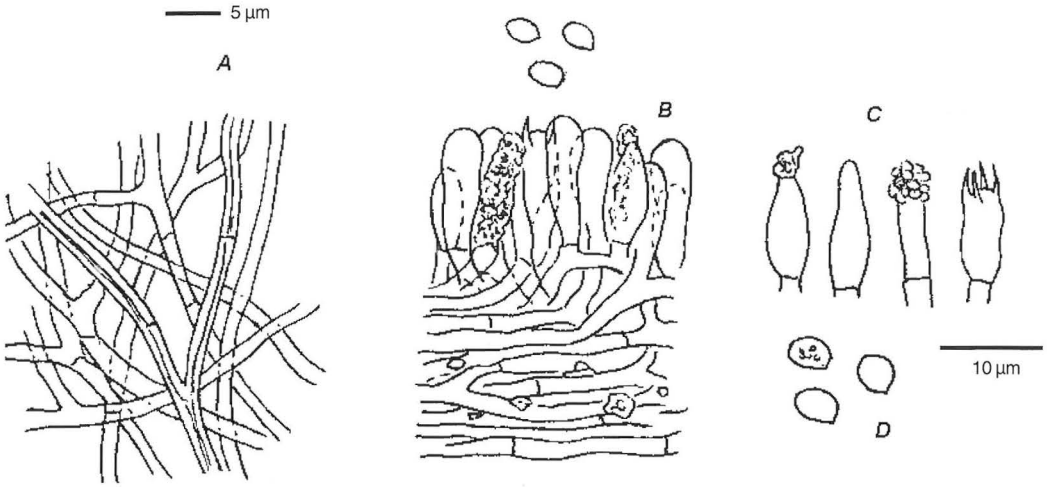

Fig. 10. *Oxyporus schizoporoides* (LE 208262): A – subicular hyphae, B – hymenium and trama, C – encrusted cystidia and basidium, D – spores.

Table 1. Comparison of characters in species of *Oxyporus* concerned.

Species	*Oxyporus schizoporoides* Zmitrovich & Spirin	*Oxyporus obducens* (Pers.) Donk	*Oxyporus similis* (Bres.) Ryvarden	*Oxyporus corticola* (Fr.) Parmasto
Pores	5–6 (7) per mm	4–6 per mm	3–5 per mm	2–5 per mm
Basal hyphae	2.5–3.5 µm wide, with narrow lumina	2.5–5 µm wide, lumina of normal appearance		1.5–5 mm wide, lumina of normal appearance
Chlamydospores	absent	7–15 × 6–9.5 mm	absent	absent
Gloeocystidia	absent	absent	absent	present
Spores	4.2–5.1 × 2.8–4.0 µm, broadly ellipsoid to subglobose	3.1–4.1 × 2.4–3.7 µm, broadly ellipsoid	4.2–4.8 × 2.8–3.5 µm, ellipsoid	4.7–6.3 (6.5) × 3.2 × 4.0 µm, ellipsoid to ovoid

Other specimens examined: *Oxyporus corticola.* **Russia.** Nizhny Novgorod region, Vetluga district, Klenovik reserve, *Betula pendula,* 12.VIII.1999 *W. Spirin* (LE 213135). – *Oxyporus obducens.* **Russia.** Karelia, Pudozh district, Besov Nos, *Populus tremula,* 26.VIII.2002 *W. Spirin* (LE 214721). – *Oxyporus similis.* **USA.** Idaho, Kanisku, *Populus,* 5.X.1956 *J.L. Lowe 7009 & R.L. Gilbertson* (LE).

Pilatoporus Kotl. & Pouzar, Česká Mykol. **44**: 230, 1990.

Type species: *Polyporus palustris* Berk. & M.A. Curtis, Grevillea **1**: 51, 1871 (= *Pilatoporus palustris* (Berk. & M.A. Curtis) Kotl. & Pouzar, ibid., p. 231).

Leptoporus epileucinus Pilát was known from North America under the name *Polyporus durescens* Overh. ex Lowe (= *Fomitopsis durescens* (Overh. ex Lowe) Gilb. & Ryvarden). It was indicated in Europe by Pilát and subsequently by Kotlaba and Pouzar (1990), when they described a new genus *Pilatoporus* and included Pilát's species into this genus. They considered that *Pilatoporus* is characterized by white context and hyaline thin-walled cylindrical or narrowly ellipsoid spores (in contrary to *Fomitopsis pinicola* (Sw. : Fr.) P. Karst. with coloured context and slightly thick-walled ellipsoid spores – see also Kotlaba & Pouzar 1998). Vampola (1996) added in diagnosis of *Pilatoporus* another essential character: the presence of thick-walled ("sclerified") rarely clamped generative hyphae in the tissue.

Bondartseva (1998) gave a description of *Pilatoporus epileucinus* (under the name *Fomitopsis epileucina* (Pilát) Ryvarden & Gilb.) in her Russian polypore flora and placed *Coriolus epileucus* (Fr.) Bondartsev in its synonymy. However, the species, described and illustrated by Bondartsev (1953) as *Coriolus epileucus*, is applicable rather to *Pilatoporus ibericus*; and therefore data on distribution of *Pilatoporus epileucinus* are obscure till now.

Pilatoporus ibericus (Melo & Ryvarden) Kotl. & Pouzar, Cryptogamie Mycologie **14**: 217, 1993. – *Fomitopsis iberica* Melo & Ryvarden, 1990. – Fig. 11.

Basidiocarps annual to persisting, sessile to effused-reflexed, often in imbricate groups. Separate pilei 1.5–13 × 3–8 × 1–3 cm, resupinate parts up to 4 cm long. Young basidiomata fleshy-fibrillose and cream-colored when fresh, fragile and with ochraceous tint when dry; older ones fibrous corky when fresh, more harder when dry. Pileal surface often with inconspicuous zones, glabrous to tuberculate or sulcate, sometimes with short appressed hairs, more or less agglutinated, pale ochraceous to brownish (especially at the margin). Margin acute to blunted. Context fibrillose, white to straw-colored, slightly zonate, 0.4–6 cm thick. Tube layer light ochraceous to greyish-brown, up to 1.5 cm thick. Pore surface concolorous with tubes, pores 3–6 per mm, rounded to sinuous, with thin to slightly thickened dissepiments, sometimes with sugary pruina.

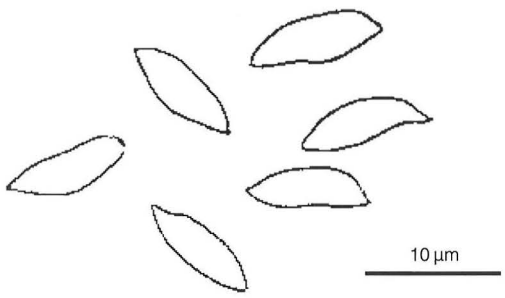

Fig. 11. *Pilatoporus ibericus* (LE 32350): spores.

Hyphal system posing as trimitic (Ryvarden & Gilbertson 1993), but basidiomata are composed mostly by sclerified very thick-walled, rarely clamped generative hyphae 2.5–7.5 µm wide (such as in *Oligoporus balsameus* (Peck) Gilb. & Ryvarden); thin-walled hyphae occur only in tube trama. Hyphae in tubes parallel, thin- to moderately thick-walled, 2–4.5 µm wide, faintly CB+. Cystidioles conical to bottle-shaped, 18–28 × 4.5–6 µm, abundant in hymenium. Basidia clavate, four-spored, 15–25 × 6–7 µm, clamped at the base. Spores distinctly fusiform, (6) 6.2–8 (8.5) × (2.5) 2.8–3.2 (3.4) µm, IKI–, faintly CB+.

On fallen trunk of broad-leaved trees, rarely on *Pinus* (Vampola 1996).

New to Russia, Armenia and Georgia.

It seems that the species is not very rare in Europe. Now it is known from Armenia, Austria, Croatia, Czech Republic, France, Georgia, Italy, Portugal, Russia, Slovakia, and also from Iran (Ryvarden & Gilbertson 1993, Vampola 1996).

Specimens examined: **Armenia.** Zanzegur, Goris district, *Carpinus caucasica*, VIII.1952 *A. Bondarstev* (LE 32349). **Georgia.** Kachetia, Batsar canyon, *Alnus, Carpinus, Fagus, Populus, Ulmus*, 14–16.IX.1938 *A. Bondartsev* (LE 32340, LE 32341, LE 32343, LE 32344, LE 32345, LE 32346, LE 32347, LE 32348, LE 32350, LE 32351). Kachetia, ex Herbarium Musei Caucasici, *Carpinus*, VI.1912 *V. Molchanov* (LE 27506). **Russia.** Krasnodar region, Hosta, *Fagus*, 16.VIII.1909 *A. Bondartsev* (LE 32368). Rjazan' region, Sarajevo district, *Tilia cordata*, 15.IX.1960 *T. Nikolajeva* (LE 32342).

Porpomyces Jülich, Persoonia **11**: 425, 1982, emend.

Type species: *Poria mucida* Pers. : Fr., Syst. Mycol. **1**: 382, 1821 (= *Porpomyces mucidus* (Pers. : Fr.) Jülich, ibid.).

Other species: *P. cremeus* (Parmasto) Spirin, Mycena **1**: 69, 2001 (= *Fibuloporia cremea* Parmasto, 1963), *P. balaenae* (Niemelä) Spirin &

Zmitrovich (see below), *P. albonigrescens* (Núñez, Parmasto & Ryvarden) Spirin & Zmitrovich (see below).

Basidiocarps annual or persistent, resupinate, effused, soft in fresh condition, fragile after drying. Margin well developed (and then sometimes rhizomorphic) to indistinct. Pore surface pale-coloured, pores often angular to sinuous. Subiculum thin or not existing, concolorous with tubes. Hyphal system monomitic, hyphae thin- to moderately thick-walled, relatively narrow (up to 4.5 μm wide), weakly amyloid in some cases; crystalline encrustation often present. Cystidia absent. Basidia short-clavate, up to 18 μm long. Spores small, ellipsoid, up to 5.5 μm long, IKI–,CB–. Causes a white rot.

Earlier one of us (Spirin 2001) proposed to include *Fibuloporia cremea* Parmasto in *Porpomyces* and regarded *Ceriporiopsis balaenae* Niemelä as its synonym. After studying the herbarium material this solution seems to be wrong. These species are very closely related, but some clear differences could be found. The shape and size of spores are different (broadly ellipsoid, 4.2–4.8 × 2.7–3.2 μm in *Ceriporiopsis balaenae*, *versus* ellipsoid, 4.6–5.4 × 2.7–3 μm in *Fibuloporia cremea*). Macroscopically *F. cremea* differs from *C. balaenae* in having well developed rhizomorphic margin, and harder, slightly corky consistence of basidiomata – like those of *Porpomyces mucidus*. So, we transfer *Ceriporiopsis balaene* into genus *Porpomyces* and propose the new combination.

Porpomyces balaenae (Niemelä) Spirin & Zmitrovich comb. nov. (basionym: *Ceriporiopsis balaenae* Niemelä, Natural. Can. **112**: 449, 1985). – Fig. 12.

Basidiocarps annual, resupinate, relatively small, soft and fragile when dry, 2–3 mm thick. Margin indeterminate, pruinose, light-colored. Pore surface initially white or straw-colored, later with dirty-yellowish tint. Pores angular, with thin lacerate dissepiments, 1–3 per mm. Subiculum white, very thin.

Hyphal system monomitic. Hyphae with clamps, mostly thin-walled, 2.5–3.5 μm wide, without encrustation. Basal hyphae weakly amyloid after heating in IKI. Cystidia absent. Basidia short-clavate, 12.5–17 × 4.5–5.5 μm, four-spored. Spores broadly ellipsoid, (3.8) 4.2–4.8 (5) × (2.5) 2.7–3.2 μm, IKI and CB–.

On wood of *Populus* and *Salix* (Niemelä et al. 1992). New to North-West Russia. Reported earlier only from Russian Far East (Núñez et al. 2001).

Fig. 12. *Porpomyces balaenae* (LE 19420): basidia, spores and subhymenial hyphae.

Specimens examined: *Ceriporiopsis balaenae*. **Finland.** Inarin Lappi: Utsjoki, *Salix*, 16.VIII.1987 *H. Kotiranta 6371* (H, dupl. in LE). **Russia.** Leningrad region, Tosno district, Lisino, *Salix caprea*, 3.IX.1960 *M. Bondartseva* (LE 19420). – *Fibuloporia cremea*. **Russia.** Kamchatka, Klutchi, *Populus suaveolens*, 18.VIII.1960 *E. Parmasto* (TAA 13599, isotype). Kamchatka, Kozyrevsk, *Populus suaveolens*, 24.VIII.1960 *E. Parmasto* (type: LE 22424). Kamchatka, Vakhtolka, *Salix sachalinensis*, 22.IX.1960 *E. Parmasto* (LE 25606).

Núñez et al. (2001) described a new species *Ceriporiopsis albonigrescens* Núñez, Parmasto & Ryvarden from Russian Far East. According to the description, this species is characterized by small ellipsoid spores and narrow hyphae. We think, *Porpomyces* is a better place for it, and propose the new combination:

Porpomyces albonigrescens (Núñez, Parmasto & Ryvarden) Spirin & Zmitrovich comb. nov. (basionym: *Ceriporiopsis albonigrescens* Núñez, Parmasto & Ryvarden, Fungal Diversity **6**: 107, 2001).

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