

New records of fungi, fungus-like organisms, and slime moulds from Europe and Asia: 14–19

Compiled by Cvetomir M. Denchev

Abstract. Information about the first finding in Bulgaria and the Balkan Peninsula of *Boletus roseoalbidus* (= *Xerocomus roseoalbidus*) is presented. A description and illustrations are provided upon the Bulgarian collections. *Cytospora sacculus* on *Ailanthus altissima* is a new record for Bulgaria. Four ascomycetes, *Hyponectria buxi*, *Plagiosphaera immersa*, *Pleuroceras pleurostylum*, *Pseudovalsa umbonata*, are reported for the first time from Bulgaria.

Key words: *Ailanthus altissima*, anamorphic fungi, *Boletales*, *Boletus roseoalbidus*, Bulgaria, *Buxus sempervirens*, *Cytospora sacculus*, *Diaporthales*, *Gnomoniaceae*, *Hyponectria buxi*, *Hyponectriaceae*, *Melanconidaceae*, *Plagiosphaera immersa*, *Pleuroceras pleurostylum*, *Pseudovalsa umbonata*, *Quercus*, *Salix*, *Xerocomus roseoalbidus*

14. *Boletus roseoalbidus* (*Boletaceae*) – a rare southern bolete in Bulgaria

Air dried specimens are preserved in the Mycological Collection of the Institute of Botany, Bulgarian Academy of Sciences (SOMF). Each sample is documented with a color photograph and concise description. Throughout the description, the color nomenclature of Kornerup & Wanscher (1978) is used as much as possible. Microscopic features are observed and measured in water. Measurement values are presented below in the following manner: (min–) mean \pm 1 σ (–max). Spore volume (V_m) is calculated according to the formula $V_m = 4/3\pi \cdot (1/2Sw)^2 \cdot 1/2Sl$; Sl – spore length, Sw – spore width, and the result is estimated to an integer number (Breitenbach & Kränzlin 1991). Iodine reaction was performed by Melzer's solution (Kirk *et al.* 2001) on dried samples.

Boletus roseoalbidus (Alessio & Littini) G. Moreno & Heykoop, *Docum. Mycol.* 25: 274, 1995. — *Xerocomus roseoalbidus* Alessio & Littini, *Micol. Ital.* 16(1): 21, 1987. **Figs 1–2**

Basidiomata single or often clustered in groups of 3–7. **Pileus** up to 7 cm in diam, at first hemisphaerical, then convex, finally flat-convex, flat or slightly depressed, finely tomentose, then glabrous or somewhat fibrillose, sometimes finely cracked, at first whitish, usually with some pale pinkish tint or pinkish or reddish spots, then pinkish white, pastel red, rose (10–11)A-B(2–3); (10–12)A-B(2–3), sometimes reddish white, shell pink, pastel red 8A(2–4) or calypso red, madder red, crayfish, coral red 9A-B(7–8) when old; surface unchanging when bruised. **Stipe** up to 6 × 2 cm, tapering or spindle-

shaped, somewhat radiating; background yellowish white or pale yellow (1–2)A(2–3), (2–4)A(4–5), usually discoloring with the age, with fine sunflower yellow, maize yellow, orange yellow, melon orange, dark orange, pastel red, orange red, or paprika red (4–5)A(6–8), 8A-B5–8 granules, reddish orange, flame red, madder red, vivid red, coral red or crayfish red 7A-B(5–7), 9A-B7–8 in the same base; stipe surface not blueing or blueing after rough handling. Reticulum absent, but ring-like pattern of coarse granules may present on the stipe surface. **Flesh** lemon yellow in the stipe, paler in the cap and at least above the tubes and below the pileipellis pinkish, but mostly pinkish overall in the cap, intensively blueing when exposed to the air. **Tubes** up to 1.5 cm long, adnate or subdecurent, lemon yellow when young, then with somewhat olivaceous tint, blueing when injured. **Pores** angular, concolorous, blueing when bruised. **Smell** not distinctive. **Taste** mild. **Basidiospores** broadly ellipsoid, (11–) 14.1 \pm 1.3 (–17) × (5.5–) 6.3 \pm 0.5 (–8) μ m ($n = 100$), ratio (1.8–) 2.2 \pm 0.2 (–2.7), spore volume (174–) 301 \pm 64 (–536) μ m³, with 1–2 large oil drops. **Basidia** clavate, generally 4-spored (2- and 3-spored basidia also occur), (27–) 32.8 \pm 2.8 (–37.5) × (12–) 13.8 \pm 1.3 (–16) μ m ($n = 60$). **Cystidia** (32–) 40.6 \pm 4.5 (–50) × (8.5–) 11.1 \pm 1.1 (–13) μ m ($n = 20$). Hymenophoral trama parallel. **Pileipellis** a trichoderm of interwoven branched septate hyphae, terminal cells (21.5–) 33.9 \pm 5.7 (–44) × (5.5–) 7.3 \pm 0.7 (–8.5) μ m ($n = 30$), ratio (2.8–) 4.7 \pm 0.9 (–6.8). **Stipitipellis** of interwoven septate hyphae, terminal cells mostly cylindrical, forming a palisade; in the “ring-zone” with numerous spore-bearing basidia. **Macrochemical and**

Figs 1-2. *Boletus roseoalbidus*



microchemical reactions: weak “fleeting-amyloid” reaction observed with Melzer’s solution with the hymenophore, no other macro- or microchemical reaction is noted.

Habitat – thermophilous broadleaved forests, usually on poor dry soils, under *Quercus* spp., up to 120 m.

Specimens examined. **BULGARIA:** Northern Black Sea coast: Varna distr., between the villages of Shkorpilovtsi and Samotino, thermophilous oak woods nearly the sea coast, between 100–120 m, under *Quercus frainetto* Ten., 42°93’ N 27°87’ E, 26 Aug 2005, B. Assyov (SOMF 25 487); between the villages of Goritsa and Roudnik, thermophilous oak woods, ca 70 m, under *Quercus frainetto*, 42°92’ N, 27°79’ E, 26 Aug 2005, B. Assyov (SOMF 25 488); Kamchia Resort, thermophilous oak woods, ca 20 m, under *Quercus frainetto*, 42°02’ N, 27°53’ E, 17 Sep 2006, B. Assyov (SOMF 26 000).

Distribution: Bulgaria, Italy (incl. Sicily and Sardegna), France (Corsica), and Spain (Alessio 1987, 1991; Simonini & Fiandri 1988; Engel *et al.* 1996; Galli 1998; Ladurner & Simonini 2003; Estadès & Lannoy 2004; Pardo *et al.* 2004; Venturella 2004).

Boletus roseoalbidus is one of the most striking European boletes. Macroscopically it is easily distinguished by the colors of the cap and of the flesh, as well as by its usually clustered habit. Another peculiar feature of this species is the secondarily angiocarpic development of the basidiomata, leading to the formation of a “ring zone” at the stipe surface, where the cap margin has been attached (Fig. 2). Among the European boletes this feature is observed also only in *B. ichnusanus* (Alessio, Galli & Littini) Oolbekking. Microscopically *B. roseoalbidus* is distinguished by its rather wide basidiospores. The three Bulgarian collections correspond well both to the original and later descriptions. The spore dimensions visibly disagree with those given in the original description, viz. 14–18 (–19) × 6–8 (–9) µm. They however fit well the measurements in statistically relevant numbers given by later authors (e.g. Simonini & Fiandri 1988; Ladurner & Simonini 2003).

Boletus roseoalbidus is a rare Mediterranean species with a limited distribution, which seems to be not yet fully understood. Thereby its occurrence in Bulgaria is very interesting as it widens its known distribution to the east

and points out the possibility of its occurrence in some other Balkan countries, e.g. Greece and Turkey. *Boletus roseoalbidus* itself seems to be an infrequent species and deserves mapping at European scale in scope of some further conservation actions.

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15. *Pleuroceras*, a new genus of *Diaporthales* from Bulgaria

The specimen of *Pleuroceras pleurostylum* is preserved in the Mycological Collection at the Institute of Botany, Bulgarian Academy of Sciences (SOMF). The sample is documented with colour microphotographs and a concise description. Microscopic features are observed in distilled water solution mixed with Cotton blue. The measurement values for asci and ascospores are presented below in the following manner: min–max. The identification is justified by Monod (1983) and Merezhko & Smyk (1991).



Fig. 3. An ascus of *Pleuroceras pleurostylum*. Scale bar = 20 μm

16. *Hyponectria buxi* (*Hyponectriaceae*) in Bulgaria

In 2008, a new ascomycete on dry leaves of box was collected. The specimens cited are deposited in the Mycological Collection, Institute of Botany, Sofia (SOMF). The samples are documented with colour macro- and microphotographs and concise description. Microscopic characteristics in LM were observed using standard methods. Ascospore measurements are given in the form: min–max (mean±standard deviation). They were taken by the help of the software Carnoy 2.0 (©2001, Peter Schols) for digital photos. The identification is justified by Munk (1957) and Wang & Hyde (1999).

Hyponectria buxi (Alb. & Schwein. : Fr.) Sacc., *Michelia* 1: 250, 1878.

Ascomata 140–214 μm diam, 90–156 μm high, immersed, depressed globose, visible as orange to brown dots on the host surface, coriaceous, ostiolate, solitary or mostly gregarious. **Asci** 50–60 × 9–11 μm, 8-spored, cylindrical-clavate to clavate, short pedicellate, unilocular. **Ascospores** 10.5–14.5 (12.46±1.04) × 3.9–5.2 (4.59±0.38) μm ($n = 50$), overlapping biseriolate or obliquely uniseriate in the ascus, hyaline, ellipsoidal or oblong, straight or inequilateral, unicellular, lacking a sheath, contents minutely guttulate.

Pleuroceras pleurostylum (Auersw.) M.E. Barr, *Mycol. Mem.* 7: 121, 1978

Fig. 3

Without stroma. **Perithecia** immersed, small, ellipsoid, with short beaks. **Asci** 85–115 × 5–8.5 μm, fusiform, 8-spored, with apical ring. **Ascospores** 45–80 × 1–2.2 μm, septate, filiform, in a fascicle, with many small guttules and terminal appendages.

Specimen examined: **BULGARIA**: On overwintered leaf of *Salix elaeagnos* Scop., Forebalkan, Lovech distr., Golyama Zhelyazna village, along river Toplya, 24 May 2009, D.Y. Stoykov (SOMF 27 562).

Note. *Pleuroceras pleurostylum* is known from Europe and North America on different species of *Salix*: *S. glauca*, *S. helvetica*, *S. lapponum*, *S. viminalis*, etc. (Monod 1983; Merezhko & Smyk 1991).

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Specimens examined: **BULGARIA**: Forebalkan, Lovech distr., Golyama Zhelyazna village, 30 Apr 2008, D.Y. Stoykov (SOMF 26 710 & 27 348); on dry leaves of *Buxus sempervirens* L.

A neotype has been designated and illustrated by Rossman *et al.* (1999). They noted that a depression was left in the leaves when the ascomata dry, a character also observed by us.

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17. *Plagiosphaera* (*Gnomoniaceae*), a new genus for Bulgaria

During routine field studies a new genus for Bulgaria was collected in two localities. Specimens are kept at the Mycological Collection, Institute of Botany, Sofia (SOMF). Microscopic characteristics in LM were observed in water with cotton blue. The identification is justified by Dennis (1978) and Monod (1983).

Plagiosphaera immersa (Trail) Petr., Sydowia 14: 351, 1960.

Perithecia black, ellipsoid, 150–200 µm, immersed in stems. **Beak** central, short, 100–200 × 50–60 µm. **Asci** 59–75 × 7–9.5 µm, 8-spored, spores in a fascicle. **Apical annulus** ca 1 µm. **Ascospores** 50–60 × 2–2.6 µm.

Specimens examined. **BULGARIA:** Forebalkan, Lovech distr., Golyama Zhelyazna village, 13 Jul 2004, D.Y. Stoykov (SOMF 27 236); on dead stems of *Urtica dioica* L. – Forebalkan, Sofia distr., above Zverino village, along the track towards the locality named Okoltchitsa, 31 May 2007, D.Y. Stoykov (SOMF 27 247); on dead herbaceous stems.

Known host species and distribution in Europe: on overwintered stalks of *Aconitum napellus* L. (Austria, Monod 1983), *Urtica dioica* L. (United Kingdom, Dennis 1978), and *Campanula* (Sogonov *et al.* 2008).

Acknowledgements. The study has been supported by grant no. DO 02-181/2008 (Bulgarian National Science Fund).

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18. *Pseudovalsa umbonata* (*Melanconidaceae*) in Bulgaria

The specimen is kept at the Mycological Collection, Institute of Botany, Sofia (SOMF). The sample is documented with colour microphotographs and a concise description. Microscopic characteristics in LM were observed in water with cotton blue. Measurements of the ascospores are given in the form: min–max (mean±standard deviation). They were taken by the help of the software Carnoy 2.0 (©2001, Peter Schols) for digital photos. Identification of the fungus is confirmed by the works of Wehmeyer (1941) and Merezhko & Smyk (1991).

Pseudovalsa umbonata (Tul. & C. Tul.) Sacc., Syll. Fung. 2: 135, 1883.

Stromata in small groups, rarely confluent. **Disc** brownish-black, breaking the host periderm. **Asci** 120–150 × 21–28 µm. **Ascospores** (28–) 35–40 (–45) × (9–) 12–14 (–15.5) µm (36.38±4.4 × 12.37±1.66) µm (*n* = 50), ellipsoid, broadly rounded at the ends, 4-celled or rarely

6-celled, with a large ellipsoid oil drop in each cell. End cells often surrounded by a hyaline sheath, ca 12 µm broad and 7–8 µm long.

Specimen examined: **BULGARIA:** Forebalkan, Lovech distr., Golyama Zhelyazna village, in the locality named Top Koriya, 13 Jul 2008, D.Y. Stoykov, SOMF 26 377; on dead, small twigs of *Carpinus betulus* L.

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19. *Cytospora sacculus* (anamorphic fungi) in Bulgaria

A new species of anamorphic fungi, *Cytospora sacculus*, was found in Bulgaria during field investigations of invasive plants. The fungus is a causal agent of drying of branches and twigs, especially of young trees. Microscopic features were observed in LM and measured in lactophenol. The measurements of conidia are given in the form: min–max (mean±1σ). Fungal specimen is preserved in the Mycological Collection at the Institute of Botany, Bulgarian Academy of Sciences (SOMF). For determination, the works of Gvritishvili (1982), Farr *et al.* (1989), Mułenko *et al.* (2008) were used.

Cytospora sacculus (Schwein.) Gvrit., Mikol. Fitopatol. 3: 207, 1969. **Figs 4–5**

Stromata subperidermal, ± compact, 600–800 × 500–560 µm, multilocular, brown, yellowish brown, flattened-rounded, gregarious or scattered. **Ostiole** central, black. **Loculi** separated, circularly arranged, different number (usually 5–6), depressed-globose, with own walls and ostiole (like pycnidia). **Conidiophores** filiform, tight, branched, 20–25 × 1.5–2 µm, hyaline. **Conidia** allantoid, unicellular, 3–7.5 (5.5±1.1) × 1–2 (1.3±0.3) µm (*n* = 100), hyaline.

Specimen examined: **BULGARIA:** Sofia region, Elin Pelin, on drying branches of *Ailanthus altissima* (Mill.) Swingle, 26 Jun 2009, leg. D.Y. Stoykov (SOMF 26 272).

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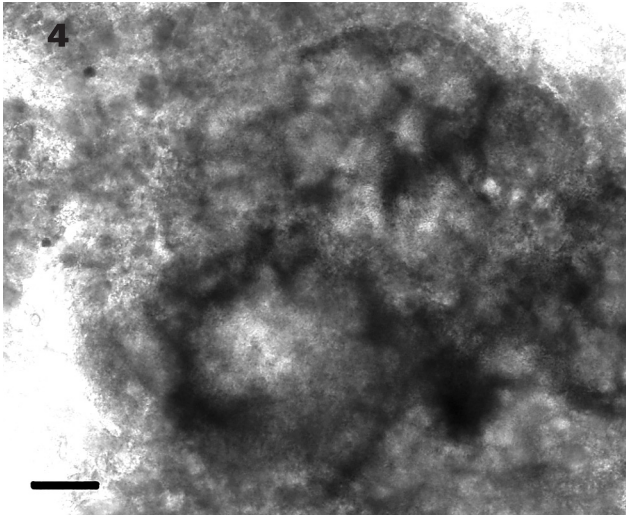
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Figs 4–5. *Cytospora sacculus*. 4. Part of a stroma. Scale bar = 100 μm . 5. Conidia. Scale bar = 10 μm