

# New records of fungi, fungus-like organisms, and slime moulds from Europe and Asia: 1-6

Compiled by Cvetomir M. Denchev

**Abstract.** *Physarum galbeum* is reported for the first time from Turkey. Four species of fungi are recorded for the first time from Bulgaria (*Botryosphaeria visci* on *Viscum album*, *Erysiphe elevata* on *Catalpa bignonioides*, *Erysiphe flexuosa* on *Aesculus hippocastanum*, and *Scleroderma polyrhizum*). Additionally, *Botryosphaeria visci* is a new record for Romania.

**Key words:** *Aesculus hippocastanum*, anamorphic fungi, ascomycetes, *Botryosphaeria*, Bulgaria, *Catalpa*, *Erysiphe*, myxomycetes, *Physarum*, Romania, *Scleroderma*, Turkey, *Viscum*

This issue sees the initiation of a new series where novel findings of fungi (incl. lichenized fungi), fungus-like organisms, and slime moulds will be briefly reported as new records for a particular country or area in Europe or Asia. New records of plant or animal hosts of parasites are also welcome. Primary headings, such as 'Introduction', 'Material & Methods', 'Results', etc., should be omitted. Each new record should include a few sentences as introduction (only if necessary); brief information about the material and methods of studies (not obligatory); species name, author(s) of this name/combination, place and date of publication, description, specimen(s) examined, collection number; host (substratum, habitat); illustration(s) (if any); short notes (of a few sentences, if considered necessary); acknowledgements (if any); references; author's name and institution. Separately, an abstract and key words should be added, but the abstract and key words of each new record will be united in identical items, common for the particular issue of *New records*.

Citations of contributions in this series are recommended to be given in the following form:

Author, A.B. 2008. *Fungus name (Erysiphaceae)* in a particular country. – In: A.B. Editor [ed.]. New records of fungi, fungus-like organisms, and slime moulds from Europe and Asia: 1-6. – *Mycologia Balcanica* 5: 94-95.

## 1. *Physarum galbeum* (*Physaraceae*) in Turkey

In September 2007, during routine field trips to different localities of Turkey, many samples of myxomycetes were collected. According to the checklists by Ergül & Dülger (2000), Sesli & Denchev (2005), and Dülger (2007), *Physarum galbeum* was found to be a new species for Turkey. This taxon was identified with the aid of Martin & Alexopoulos (1969) and (Farr 1976). The specimen cited is deposited in the Herbarium of Canakkale Onsekiz Mart University in Canakkale and in the author's personal collection.

*Physarum galbeum* Wingate, in Macbride, N. Amer. slime-moulds: 53, 1899. **Figs 1-2**

**Sporangia** stalked, globose, golden-yellow, 0.5-1.2 mm high, 0.4-0.6 mm in diameter. Hypothallus small, thin, orange. Stalk subulate, about twice the diameter of the sporangium, bright orange below, yellow above, furrowed. Peridium weak, thin, plated with yellow calcareous flakes. Capillitium a small

meshed, persistent net of yellow tubules with small and yellow angular lime nodes. **Spores** pale brown in mass, pale yellow-brown in transmitted light, 7-10 µm in diameter, smooth.

**Specimen examined:** TURKEY: Canakkale, Guzelyali, 40°00'59.98" N, 26°19'19.50" E, alt. 35 m, on dead twig of *Rosa canina*, 17 Sep 2007 BD (BD 620).

This species is marked by erect, golden-yellow, globose sporangia, the delicate capillitium with yellow tubules with small, yellow angular lime nodes and smooth, yellow-brown spores.

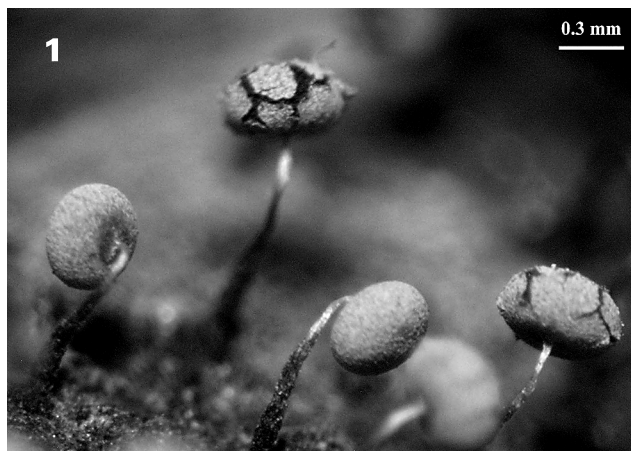
Dülger, B. 2007. Checklist of the myxomycetes in Turkey. – *Mycologia Balcanica* 4: 151-155.

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Figs 1-2. *Physarum galbeum* Wingate. 1. Stereomicroscopic image of the sporangia. Bar = 0.3 mm. 2. A view of capillitium and spores. Bar = 20  $\mu$ m

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### 2-3. *Botryosphaeria visci* (*Botryosphaeriaceae*) in Bulgaria and Romania

New findings of *Botryosphaeria visci* are reported from Bulgaria and Romania. Fungal specimens are deposited in the Mycological Collection of the Institute of Botany, Bulgarian Academy of Sciences (SOMF). The micromorphologic features were observed and measured in lactophenol and in distilled water. For determination, the monographs by Arx & Müller (1954) and Sivanesan (1984) were used.

*Botryosphaeria visci* (Kalchbr.) Arx & E. Müll., Beitr. Kryptogamenfl. Schweiz 11: 41, 1954.

Anamorph: *Sphaeropsis visci* (Alb. & Schwein.) Sacc., Michelia 2(6): 105, 1880.

**Conidiomata** (270–) 325-450 (–480)  $\mu$ m in diam, darkened, stromatic, erumpent, scattered in leaf tissues, immersed below the epidermis, ostiolate, single. **Conidia** 37.5-53  $\times$  14.5-25.5  $\mu$ m (45.6  $\pm$  3.7  $\times$  18.4  $\pm$  2.3) ( $n$  = 50; SOMF 25 411); 30-43 (–51.5)  $\times$  16-22 (–23.5)  $\mu$ m (37.4  $\pm$  5.6  $\times$  19.2  $\pm$  2.2) ( $n$  = 50, SOMF 26 181), ovoid, sometimes irregular, one celled, hyaline, dark brown to yellowish.

*Specimens examined*: on dry leaves and petioles of *Viscum album* L. **BULGARIA**: Black Sea coast, Silistar, alt. ca 0 m,

25 May 2007, DYS (SOMF 26 369); Pirin Mts, Bunderishka Dolina valley, alt. ca 1200 m, 21 Jul 2002, BA (SOMF 25 411); **ROMANIA**: Distr. Ilfov, Bucharest, Botanical Garden, 7 Feb 2007, BA (SOMF 26 181).

From the Balkans, this fungus has been recorded in Greece (Pantidou 1973) and Turkey (Stoykov & Denchev 2007).

**Acknowledgements.** One of the Bulgarian specimens was collected during the work within the frame of project MU-B-1513/05, financed by the Bulgarian National Science Fund.

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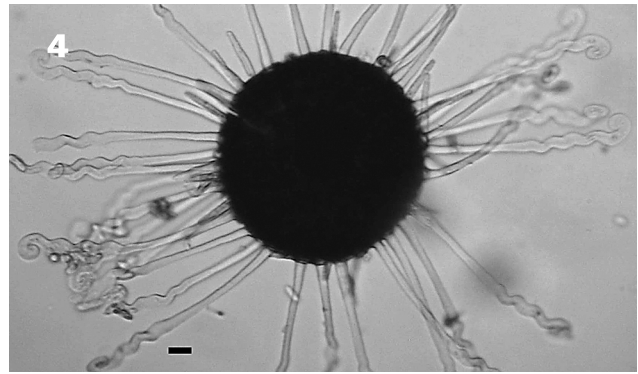
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### 4. *Erysiphe flexuosa* (*Erysiphales*) in Bulgaria

A new invasive species of powdery mildew, *Erysiphe flexuosa*, was found in Bulgaria during the last years. It is a common powdery mildew species infecting *Aesculus* trees in North America (USA) and Europe (Croatia, France, Germany, Lithuania, Poland,

Romania, Serbia, Slovakia, Slovenia, Switzerland, Ukraine, and United Kingdom (Braun 1987; Zimmermannová-Pastirčáková *et al.* 2002; Heluta & Voytyuk 2004; Glawe & Dugan 2006; Pricop & Tănase 2007; etc.). Ing & Spooner (2002) suggest that *E. flexuosa* is either a native species in North America which has recently spread to Europe or most likely, it is a native



Figs 3-4. *Erysiphe flexuosa* on leaves of *Aesculus hippocastanum*. 3. Habit. 4. Chasmothecium. Bar = 20  $\mu$ m

species in the Balkans which was introduced into America and is also spreading westwards in Europe.

The micromorphologic features were observed in LM and measured in lactophenol and distilled water. Fungal specimens are deposited in the Mycological Collection of the Institute of Botany, Bulgarian Academy of Sciences (SOMF).

*Erysiphe flexuosa* (Peck) U. Braun & S. Takam., *Schlechtendalia* 4: 19, 2000. **Figs 3-4**

White powdery mildew colonies on the upper and the lower leaf surfaces of both young and old leaves, mycelium superficial. **Ascomata** subglobose, (82–) 130–150 (–165)  $\mu$ m in diam, abundant, mostly on the lower leaf surface, with 6–10 asci and two types of appendages (long ones terminating in circinate tips and short, bristle-like ones). **Appendages** 100–152  $\times$  6–8  $\mu$ m, long, straight, undulate in the upper half; 12–28 (–40)  $\times$  5–8  $\mu$ m, short, straight, subulate, thick-walled. **Asci** 45–70  $\times$  18–40  $\mu$ m, clavate, short stalked. **Ascospores** 16–22 (–24.5)  $\times$  (7.5–) 10–13  $\mu$ m, ellipsoid, one-celled, hyaline.

Anamorph: *Pseudoidium* type. **Conidia** 24–40 (–45)  $\times$  9–15  $\mu$ m, cylindrical, hyaline, one-celled.

*Specimens examined*: on leaves of *Aesculus hippocastanum* L. **BULGARIA**: Black Sea coast (northern), Varna, Galata, 22 Sep 2007, DYS (SOMF 26 332); Northeastern Bulgaria, Natural Park Shoumensko Plato, nearby Zandana Cave, 23

Oct 2007, DYS (SOMF 26 330); Forebalkan, Vratsa, 17 Aug 2006, DYS (SOMF 26 322); Sofia region, Sofia, 11 Oct 2005, CMD (SOMF 26 324), 6 Aug 2006, DYS (SOMF 26 325), 23 Jul 2007, DYS & CMD (SOMF 26 323).

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Zimmermannová-Pastirčáková, K., Adamska, I., Błaszowski, J., Bolay, A. & Braun, U. 2002. Epidemic spread of *Erysiphe flexuosa* (North American powdery mildew of horse chestnut) in Europe. – *Schlechtendalia* 8: 39–45.

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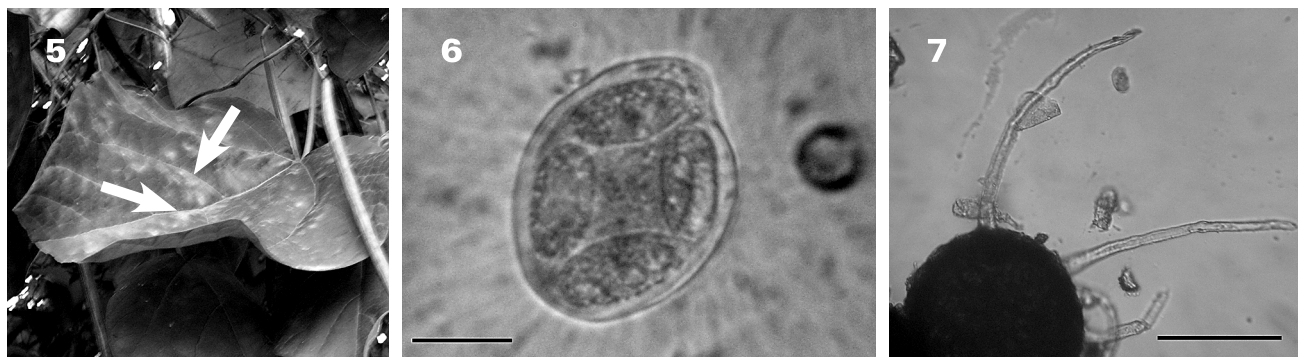
## 5. *Erysiphe elevata* (*Erysiphales*) in Bulgaria

*Erysiphe elevata*, an invasive species of powdery mildew, is reported for the first time from Bulgaria. It is a common species infecting *Catalpa* trees in North America (USA and Canada – Braun 1987) and several countries in Europe (Czech Republic, Germany, Hungary, Switzerland, Slovakia, United Kingdom, etc.) (Ale-Agha *et al.* 2004; Cook *et al.* 2004; Pastirčáková *et al.* 2006; etc.). *Erysiphe elevata* is known on *Catalpa bignonioides* Walt., *C. speciosa* Engelm., and *Catalpa  $\times$  erubescens* Carr. The fungus originates from North America. It attacks leaves and fruits, covering them with white, arachnid coating.

The micromorphologic features were observed in LM and measured in lactophenol and distilled water. Fungal specimens are deposited in the Mycological Collection of the Institute of Botany, Bulgarian Academy of Sciences (SOMF).

*Erysiphe elevata* (Burrill) U. Braun & S. Takam., *Schlechtendalia* 4: 8, 2000. **Figs 5-7**

White powdery mildew colonies have been detected and were spread on the upper surfaces of young and old leaves. **Ascomata** (70–) 85–110  $\mu$ m in diam, visible to the unaided eye, were produced on the upper leaf surface, contained 4–7 asci and bore 3–8 appendages per ascoma. **Appendages** flaccid, (90–) 135–170 (–210)  $\times$  (5.5–) 6.5–8.5  $\mu$ m, filiform,



Figs 5-7. *Erysiphe elevata* on leaves of *Catalpa bignonioides*. 5. Habit. 6. Ascus (Bar = 20 µm). 7. Chasmothecium (Bar = 50 µm)

hyaline, aseptate, straight or slightly sinuous, apex 2-5 times densely dichotomously branched, tips straight or slightly curved, with a single basal septum, 1.5-2 times as long as the ascoma diameter. **Asci** 45-55 × 35-40 µm, short-stalked or sessile. **Ascospores** 20-25 × 12-14 µm, hyaline, ellipsoid to ovoid.

*Specimens examined:* on leaves of *Catalpa bignonioides* Walt. **BULGARIA:** Forebalkan, Staro Selo village, 7 Sep 2007, DYS (SOMF 26 368); Golyama Zhelyazna village, 7 Sep 2007, DYS (SOMF 26 370); Stara Planina Mts, Troyan, 11 Oct 2006, DYS (SOMF 25 933) & 23 Jul 2007 (SOMF 26 328); Sofia region, Sofia, Lyulin, 27 Aug 2007, DYS (SOMF 26 371) & 5 Sep 2007 (SOMF 26 372).

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## 6. *Scleroderma polyrhizum* (*Sclerodermataceae*, *Boletales*) in Bulgaria

The specimen is kept in the Mycological Collection of the Institute of Botany of the Bulgarian Academy of Sciences (SOMF) and is documented with a color photograph. Microscopic examination and basidiospore measurements are conducted in water. The species is identified according to Pegler *et al.* (1995).

*Scleroderma polyrhizum* (J.F. Gmel. : Pers.) Pers., *Syn. Meth. Fung.* 1: 156, 1801.

**Basidiomata** up to 15 cm in diameter, more or less globose, tapering with a compact mycelial base, without pseudostipe. **Peridium** thick (up to 5 mm), greyish brown, at first smooth then squamulose, splitting at the apex into unequal recurved lobes. **Gleba** rusty brown to sepia brown. Clamp-connexions present. **Basidiospores** globose, 8-10.5 (8.9±0.5) µm long (excl. the ornament) (*n* = 50), fuscous brown, with a low ornament on the surface of small verrucae forming an incomplete reticulum, crests less than 1 µm high.

*Specimen examined:* **BULGARIA:** Mt Belasitsa, road between Belasitsa Chalet and Kongur Chalet, on sandy soil at the border of deciduous woodland, 12 Oct 2007, leg. I. Assyova & Rossen Vassilev, det. I. Assyova & B. Assyov (SOMF 26 667).

This species is characterized by a southern distribution. It is easily distinguished by its quite large basidiomata (up to 15 cm in diam), the thick peridium, splitting at the apex in unequal lobes and by the relatively small (8-10.5 µm) basidiospores with an incomplete reticulum.

**Acknowledgements.** The study of Bulgarian *Boletales* is supported by a grant No MU-B-1513/05 by the Bulgarian National Scientific Fund.

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