

New records of micromycetes from Czech and Slovak Republics. III.
Acremonium furcatum, *Gonatobotryum parasiticum*, *Stachybotrys bisbyi*, and *Wardomyces inflatus*

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Kubátová A. (1994): New records of micromycetes from Czech and Slovak Republics. III. *Acremonium furcatum*, *Gonatobotryum parasiticum*, *Stachybotrys bisbyi*, and *Wardomyces inflatus*. Czech Mycol. 47: 151-158

Four species of the lesser known filamentous microfungi (Deuteromycotina) are reported from Czech and Slovak Republics, which appear to be the first published records of these fungi for this area. *Acremonium furcatum*, *Stachybotrys bisbyi* and *Wardomyces inflatus* were isolated from soil, *Gonatobotryum parasiticum* was found on *Trichoderma* sp. on dead wood. Description and illustrations are given. The strains of the three former fungi are maintained in the Culture Collection of Fungi (CCF), Prague.

Key words: filamentous microfungi, Deuteromycotina, new records, Czech Republic, Slovak Republic

Kubátová A. (1994): Nové nálezy mikroskopických hub v České a Slovenské republice. III. *Acremonium furcatum*, *Gonatobotryum parasiticum*, *Stachybotrys bisbyi* a *Wardomyces inflatus*. Czech Mycol. 47: 151-158

Z půdy a ze dřeva byly izolovány další mikroskopické vláknité houby, jejichž nálezy v českých zemích ani na Slovensku nebyly dosud publikovány (Deuteromycotina: *Acremonium furcatum*, *Gonatobotryum parasiticum*, *Stachybotrys bisbyi*, *Wardomyces inflatus*). Je uvedena jejich charakteristika a vyobrazení. Čisté kultury těchto hub (kromě *G. parasiticum*, jež roste uspokojivě jen v přítomnosti hostitelské houby) jsou uchovávány ve Sběrce kultur hub (CCF) katedry botaniky přírodovědecké fakulty UK v Praze.

During a study of micromycetes in soil and other substrates in the past years some filamentous fungi were isolated, which were not yet published from Czech and Slovak Republics. The strains were isolated on soil extract agar with rose Bengal, streptomycin and LiCl. All fungi with exception of *Gonatobotryum parasiticum* can be found in Culture Collection of Fungi (CCF), Department of Botany, Charles University, Prague, Czech Republic. This paper is a continuation of two previous articles on new records of micromycetes from Czechoslovakia (Kubátová 1992, 1993).

***Acremonium furcatum* (F. et R. Moreau) ex W. Gams 1970**

Syn.: *Cephalosporium furcatum* F. et R. Moreau 1941

The strain CCF 2806 was isolated from a beech forest soil, Bradlec hill, near Jičín, eastern Bohemia, elevation ca 500 m, in VII. 1991 by A. Kubátová as No. 98/91.

Description:

Colonies on maltextract agar after 10 days at 25°C ca 24 mm in diam., on potato-carrot agar growing somewhat faster, reaching ca 33 mm in diam., whitish, later pale buff, velutinous to funiculose. Reverse buff to pale brown. Hyphae hyaline, forming synnemata, bearing mono- or polyphialides (Fig. 1). Phialides 9–24 × 2–2.3 μm, often proliferating. Conidia one-celled, hyaline, ellipsoidal to short cylindrical, 3.1–4.0 × 1.8–2.0 μm. The fungus was identified according to Gams (1971).

Habitat and distribution:

Acremonium furcatum is after Domsch et al. (1980) very common in soils, decaying plant substrates, and is also known from moist walls. It has been reported from several European countries, from Nigeria, Turkey, India, Nepal, Hong Kong, and USA.

Biochemical characters:

Acremonium furcatum was found to inhibit the growth of *Chlorella pyrenoidosa* and is also known to be antagonistic to *Rhizoctonia solani*. It utilizes cellulose, carboxymethylcellulose and xylan (Domsch et al. 1980).

***Wardomyces inflatus* (Marchal) Hennebert 1968**

Syn.: *Trichosporium inflatum* Marchal 1895

Wardomyces hughesii Hennebert 1962

The strain CCF 2742 was isolated from meadow soil, Zázrivá near Dolný Kubín, northern Slovakia, elevation ca 860 m, in IX. 1991 by A. Kubátová as No. 108/91.

Description:

Colonies on oat, potato-carrot and corn agars after 10 days at 25°C ca 23–28 mm in diam., felted, grey, later becoming blackish, reverse grey. Conidiophores (Fig. 2) simple or branched, hyaline, with inflated ampulliform, clavate or subspherical conidiogenous cells, 4.5–6.2 × 2.3–3.1 μm. Conidia one-celled, smooth, blackish brown, ellipsoidal or oblong, truncate at the base, 6.2–7 × 3.1–3.8 μm. The fungus was identified according to Ellis (1971) and Hennebert (1968).

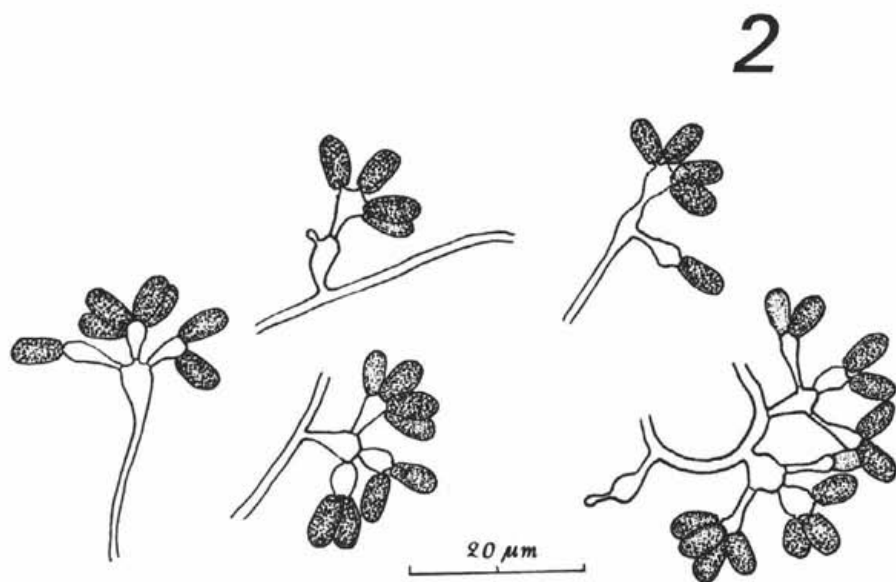
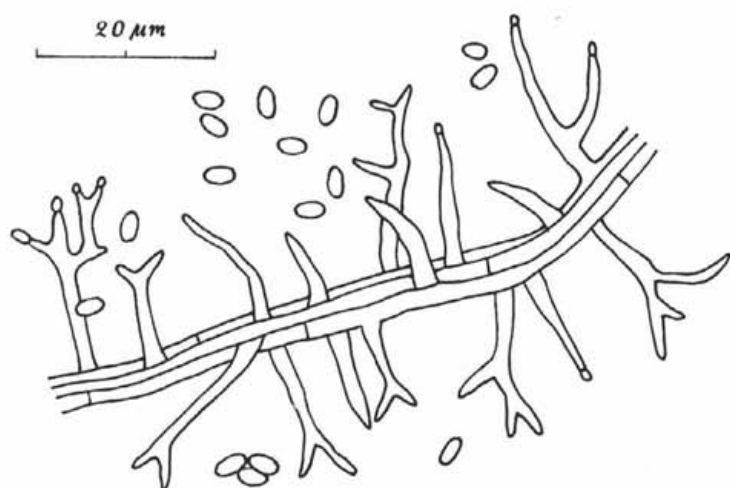


Fig. 1. *Acremonium furcatum* – strain CCF 2806 grown on maltextract agar, conidiophores with phialides and conidia.

A. Kubátová del.

Fig. 2. *Wardomyces inflatus* – strain CCF 2742 grown on wort agar, conidiophores with phialides and conidia.

A. Kubátová del.

Habitat and distribution:

Hennebert (1962) isolated this fungus from wood of *Acer* in Canada and from greenhouse soil in Belgium. He also listed records from pig dung in Belgium and from soil in Canada (Hennebert 1968). Dickinson (1964) found *W. inflatus* in salt marsh mud at Gibraltar Point. Ellis (1971) reported records from *Acer*, *Pteridium* and soils in Europe and North America.

***Stachybotrys bisbyi* (Srinivasan) Barron 1964**

Syn.: *Stachybotrys elegans* (Pidopl.) W. Gams 1980

Hyalostachybotrys bisbyi Srinivasan 1958

Stachybotrys aurantia Barron 1962

The strain CCF 2730 was isolated from an arable soil, Loučec near Mladá Boleslav, eastern Bohemia, elevation ca 220 m, in IV. 1991 by A. Kubátová as No. 61/91.

The strain CCF 2741 was isolated from a meadow soil, Zázrivá near Dolný Kubín, northern Slovakia, elevation ca 860 m, in IX. 1991 by A. Kubátová as No. 126/91.

Description:

Colonies on oat agar whitish, later salmon pink coloured, fast growing, reaching ca 70–75 mm after 10 days at 25°C. After several transfers the ability of sporulations is decreasing (see also remarks of Jong and Davis 1976; Domsch et al. 1980). After Barron (1962) the fungus required biotin for normal growth. Conidiophores (Fig. 3) erect, usually unbranched, hyaline, sometimes rough-walled at the lower parts, attenuated toward the tip, 50–100 × 4–6 µm, with cluster of 4–7 phialides at the apex. Phialides subclavate, smooth-walled, 12.4–15.6 × 4.7–5.4 µm. Conidia one-celled, fusiform to ellipsoidal, hyaline, smooth-walled, guttulate, 11–17 × 7.8–9.3 µm, aggregated in slimy masses. The identification was made according to Jong and Davis (1976) and Domsch et al. (1980).

Habitat and distribution:

Jong and Davis (1976) and Domsch et al. (1980) listed numerous records from different types of soils, rhizosphere, roots and wood in Canada, Germany, Egypt, South Africa, Mozambique, India, Japan and Papua-New Guinea. *S. bisbyi* was isolated from soil in Poland also (Truszkowska and Kalinska 1979, Truszkowska and Laciowa 1986). Wang and Zabel (1990) reported its occurrence on wood in New York. Turhan (1990) demonstrated the ability of hyperparasitism of this fungus on *Rhizoctonia solani*. Cytochemical study of the mycoparasitic interaction was done by Benyagoub et al. (1992).

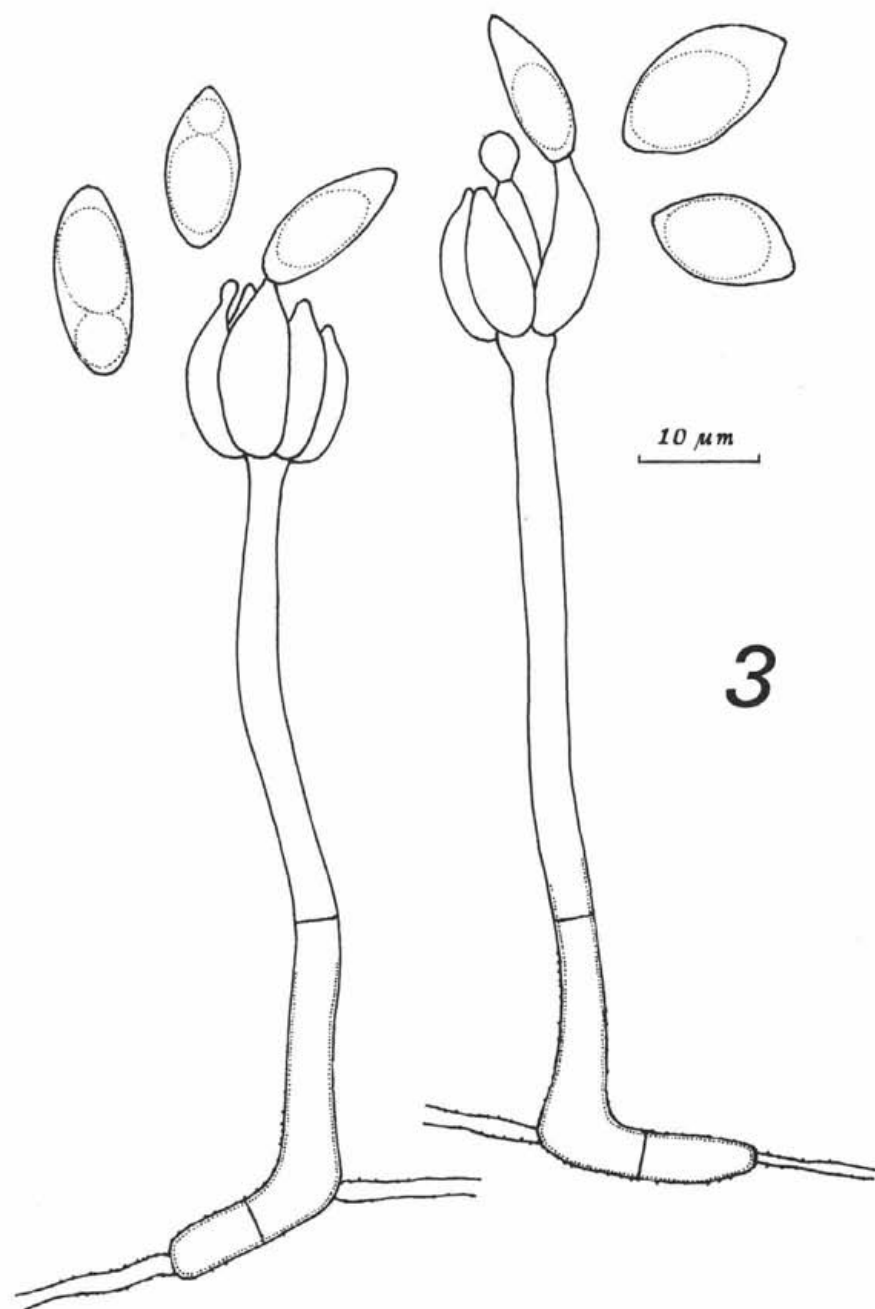


Fig. 3. *Stachybotrys bisbyi* - strain CCF 2741 grown on oat agar, conidiophores with conidia.
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Gonatobotryum parasiticum (Thaxt.) Jane Walker et Minter 1981Syn.: *Gonatorrhodiella parasitica* Thaxt. 1891*Nematogonum parasiticum* (Thaxt.) Hughes 1953

This fungus was found on a *Trichoderma* sp. growing on a dead branch without a bark laying on the earth in mixed forest on left bank of an Oslava river, near Náměšť nad Oslavou, bellow the ruin of Lamberk, south Moravia, elevation ca 340 m, in VIII. 1991 by A. Kubátová as No. 106/91. The attempts to isolate the fungus in pure culture failed, the fungus was grown in laboratory conditions only in mixed culture (in this case with *Acremonium* sp. and *Trichoderma* sp.).

Description:

Colonies of *G. parasiticum* appeared on corn agar after 3–4 weeks, when *Trichoderma* sp. and *Acremonium* sp. covered the whole Petri dish. They are at first whitish, becoming orange with production of conidia. Conidiophores (Fig. 4) smooth, hyaline to pale brown, 7.8–11 μm thick, up to 1.5 mm long, with swollen conidiogenous cells of globose or ovoid form, 24–32 \times 18–24 μm . Conidiogenous cells having large number of conidiogenous loci, on them conidia formed in chains of three. Conidia one-celled, hyaline to pale brown, less or more smooth, ellipsoidal, 7.8–12.4 \times 6–7.8 μm . The strain was identified according to Walker and Minter (1981).

Habitat and distribution:

Gonatobotryum parasiticum is known as parasite on fungi. It has been recorded from *Ganoderma*, *Polyporus*, *Poria*, *Tremella*, *Trichoderma*, *Hypocrea* and *Hypomyces* from Europe and North America (after Walker and Minter 1981).

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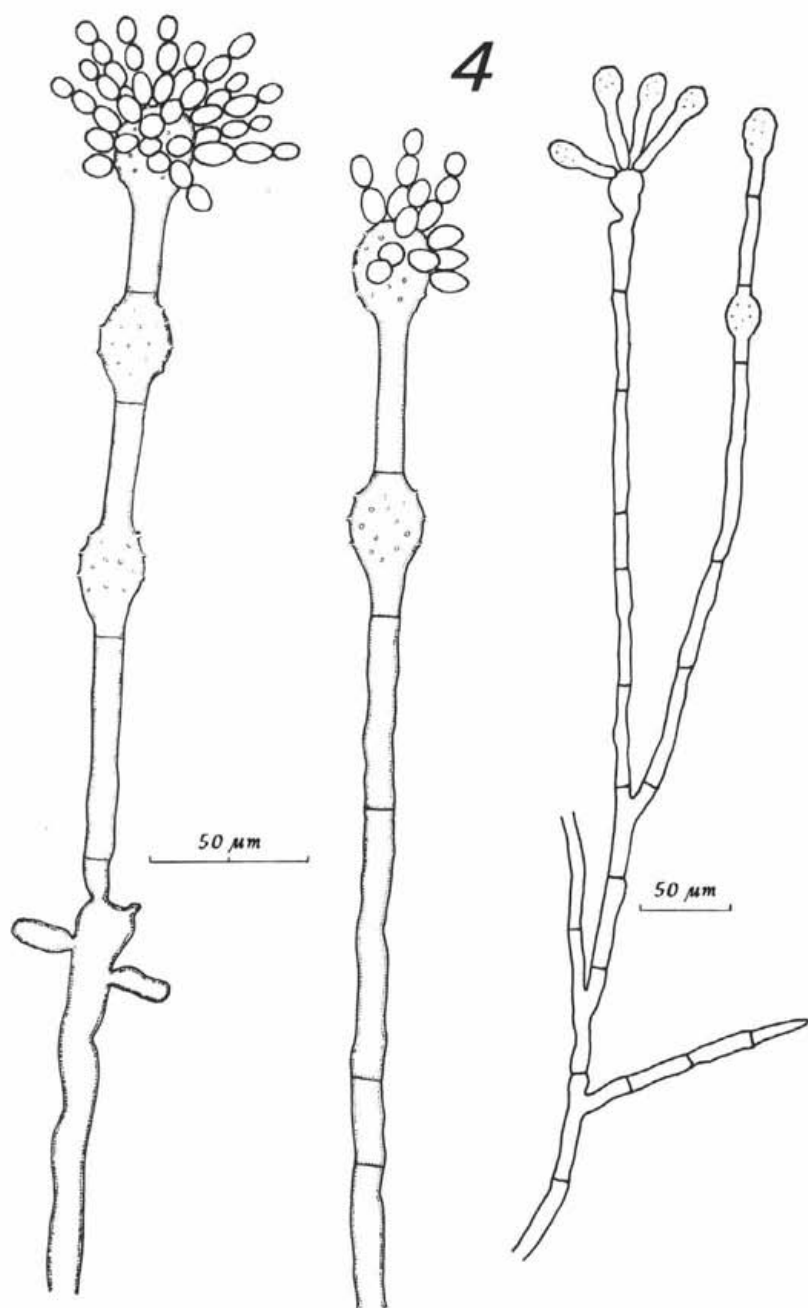


Fig. 4. *Gonatobotryum parasiticum* – strain AK 106/91 grown on CMA in mixed culture with *Acremonium* sp. and *Trichoderma* sp., conidiophores with conidia. A. Kubátová del.

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