

First lichenicolous record of *Acremonium hypholomatis* (anamorphic Ascomycota)

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Abstract. The rarely collected, at least facultative fungicolous *Acremonium hypholomatis* was previously known only from Sumatra and New Guinea. It is here reported from Germany, where it parasitized thalli of the lichen *Physcia stellaris*.

Introduction

The hyphomycetous genus *Acremonium* Link includes c. 117 species (Kirk et al. 2008), of which most are saprobic, but some are also pathogens of plants, animals or fungi (incl. lichens) (Gams 1971, Hawksworth 1979, Carmichael et al. 1980). A worldwide revision was published by Gams (1971), based almost exclusively on cultures of *Acremonium* isolates. Several lichenicolous species were accepted by Hawksworth (1979), and based on a review of all known lichenicolous species Lowen (1995) introduced the new section *Lichenoidea* Lowen for most of them.

Boedijn (1929: 425) described the new fungicolous hyphomycete *Cephalosporium hypholomatis* Boedijn (as '*hypholomae*') from Sumatra developing over gills of *Hypholoma fasciculare* (Huds.) P. Kumm. Later, Hawksworth (1972) realized that a water culture of unidentified decaying leaves collected by A. Hutton in New Guinea belonged to the same species, and he subsequently combined the name in *Acremonium*, as *A. hypholomatis* (Boedijn) D. Hawksw. Since no original material of Boedijn's taxon could be traced by Hawksworth, he designated the New Guinea isolate as neotype. According to Hawksworth (1972), the species belongs to *Acremonium* Link sect. *Nectrioidea* W. Gams and is clearly distinguished from all species of *Acremonium* accepted by Gams (1971) by conspicuously larger conidia.

We recently received a German specimen of a lichenicolous *Acremonium*-like hyphomycete for identification. Although the specimen was too old for attempting a culture, the morphological characters allowed its identification as *Acremonium hypholomatis*. The aim of this paper is, therefore, to report the first lichenicolous population of this species and to briefly describe the specimen concerned.

Results

Acremonium hypholomatis (Boedijn) D. Hawksw.

Trans. Brit. Mycol. Soc. 58: 510 (1972). – *Cephalosporium hypholomatis* (as '*hypholomae*') Boedijn, *Rec. Trav. Bot. Néerland.* 26: 425 (1929); type: Indonesia, Sumatra, "Deleng Singkoet bei Brastagi (Karolanden)", s. dat. [between 1921 and 1929], type lost; neotype: New Guinea, stream near Garaina, isol. from water culture of unidentified decaying leaves, 1970, A. Hutton, isol. by D.E. Shaw, TPNG 7110 (IMI 149587–neotype; CBS 829.70–isoneotype).

Parasitized thalli of *Physcia stellaris* pale pinkish. Conidiophores abundant in some infected areas and easily visible under a dissecting microscope, erect, simple, basally septate. Conidiogenous cells hyaline, 35–55 µm long, in the lower two third 3.5–5 µm thick, in the upper third 2–3 µm thick, phialidic, producing apically a single large conid-

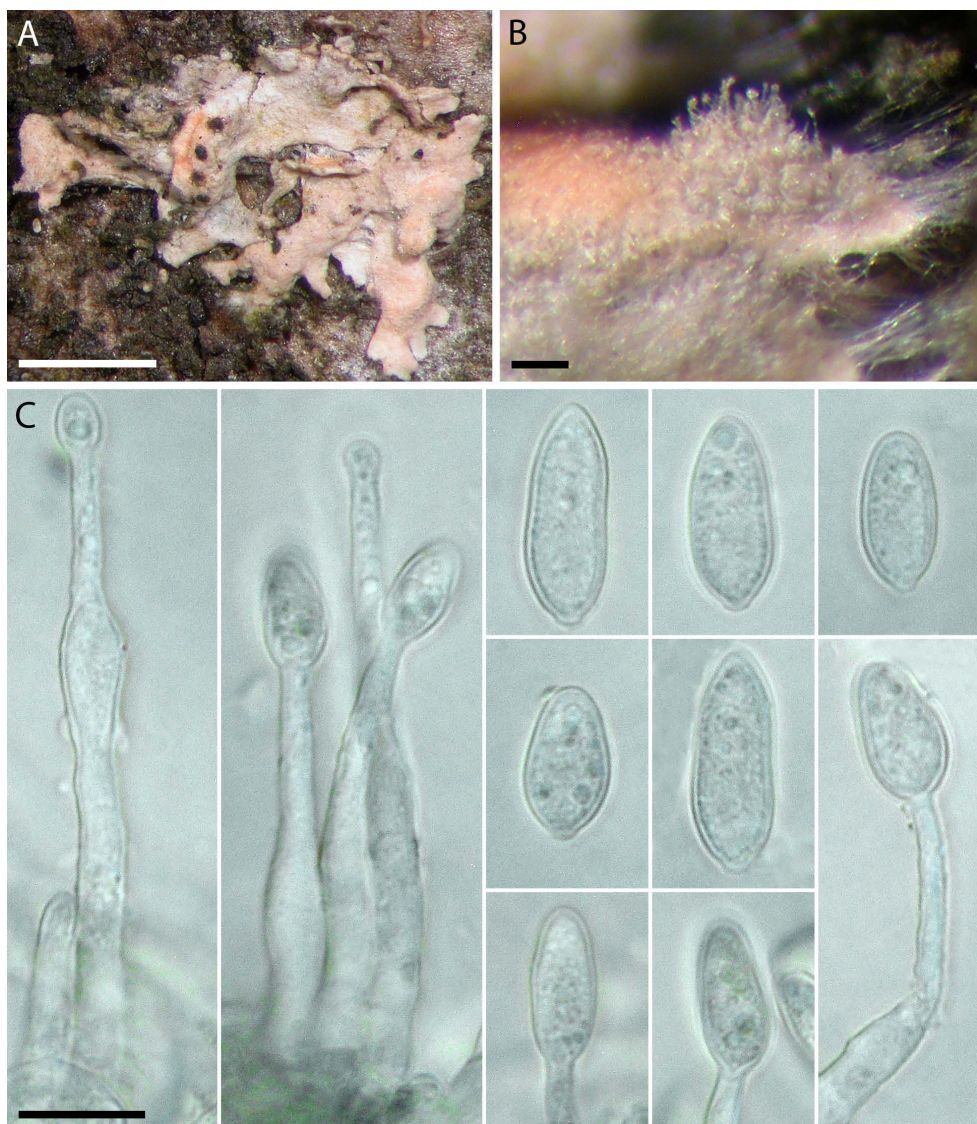


Fig. 1. *Acremonium hypholomatis* (M. Heklau s. n.). A, Parasitized thallus of *Physcia stellaris*. B, Conidiophores and conidia on the thallus of the host. C, Conidiophores and conidia. Scale bars : A = 1 mm, B = 100 µm, C = 10 µm.

ium. Conidia hyaline, aseptate, ellipsoid, apically rounded, basally narrowly truncate, $11.5\text{--}20 \times 5.5\text{--}7$ µm. Chlamydospores not observed.

Boedijn (1929) reported the conidia as $14\text{--}18 \times 3.5\text{--}4.5$ µm and Hawksworth (1972) as $12.5\text{--}18 \times 4\text{--}7$ µm. Our material perfectly agrees with the latter measurements. Although no culture of the lichenicolous specimen is available, it is so similar to the

description given by Hawksworth (1972) that there is little doubt that we are dealing with the same fungus. Both Boedijn (1929) and Hawksworth (1972) observed that conidia are formed singly at the apices of the conidiogenous cells and become aggregated into slimy heads. Formation of such conidial aggregations, which is usually only evident in cultures of *Acremonium* spp., was not observed in the lichenicolous specimen. A

detailed description of the species, together with illustrations, was provided by Hawksworth (1972).

Lowen (1989) described another lichenicolous species with particularly large conidia, viz. *Acremonium pedatum* Lowen. Conidia in that species were described to be $12\text{--}24 \times 4 \mu\text{m}$, which is reminiscent of the conidia reported by Boedijn (1929). There are, however, important differences between *A. pedatum* and *A. hypholomatis*. Conidia of *A. hypholomatis* are obviously broader and usually broadest in the middle of the conidium; those of *A. pedatum* are frequently narrower and constricted in the middle. Conidiophores of *A. hypholomatis* are septate, rarely branched and much longer (at least $35 \mu\text{m}$ long) than those of *A. pedatum* ($12\text{--}22 \mu\text{m}$ long) that are aseptate and not branched. Phialides of *A. pedatum* are apically thicker than those of *A. hypholomatis*. Finally, *A. pedatum* and its teleomorph *Trichonectria anisospora* (Lowen) van den Boom & Diederich are confined to *Hypogymnia physodes* thalli, whilst *A. hypholomatis* appears to be at least facultatively fungicolous (incl. lichenicolous), but not host-specific.

Specimen examined: Germany: Bayern, Allgäu, Oberstdorf, Bolsterlang, 400 m N der Hörnerbahn Talstation, am Bergblickweg nach Kierwang, c.

940 m, on *Fraxinus*, on *Physcia stellaris*, 18 Nov. 2006, M. Heklau s. n. (STU, hb. Diederich).

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