



***Sporidesmium bilgiriense* - A new species of microfungi from Western Ghats of India**

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Abstract

A new species of *Sporidesmium* was discovered during a survey of micro fungi in Biligiri Rangaswamy Temple Wildlife Sanctuary, Karnataka. The new species, *Sporidesmium bilgiriense* is distinguished from other species of *Sporidesmium* by having conidia with an apical nodal structure.

Key words – Biligiri Rangaswamy – taxonomy– biodiversity – new species

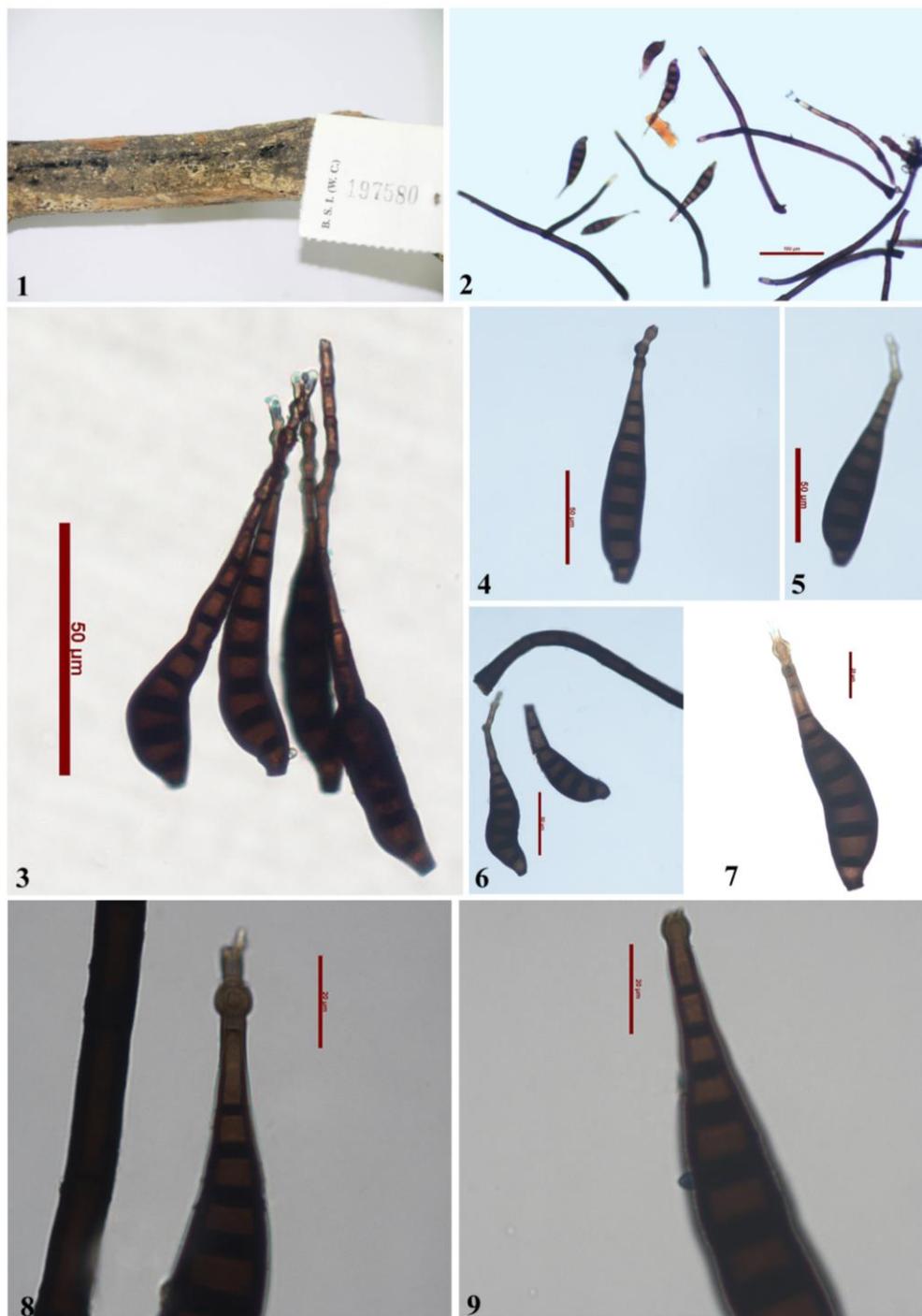
Introduction

Biligiri Rangaswamy Temple Wildlife Sanctuary (BRT WLS) is located at the easternmost edge of the Western Ghats of India, between 11°N and 12°N. The sanctuary covers 540 sq km and is considered a 'bridge' between the Eastern Ghats and the Western Ghats. It contains scrub, dry deciduous, moist deciduous, semi-evergreen, evergreen and shola forests and is likely to harbour rich but still under explored mycobiota (Kumara et al. 2012). In the course of our continuing studies on saprobic microfungi occurring in the area, particularly those hyphomycetous anamorphs associated with dead plant debris, a distinct and unusual species of *Sporidesmium* Subram. was found. The fungus agrees well with the generic concept originally introduced by Subramanian (1992) for *Sporidesmium*-like taxa with euseptate conidia and conidiophores with or without proliferating conidiogenous cells. However, it is distinct from previously described species of *Sporidesmium* in having conidia with 7-9 very dark thick bands, and 2-4 nodal structure at the apical portion, which finally ends in a knob like structure. It is therefore proposed as a new species.

Materials and Methods

Isolates and morphology

Samples of dried leaves were placed in paper and aluminium foil bags, taken to the laboratory, and prepared according to Castaneda–Ruiz (2005). The morphological description is based on an examination of material mounted in hydrous lacto phenol and cotton blue. Photomicrographs were taken with the help of a Nikon eclipse 50 i microscope connected to a Nikon DS – Fi 1 camera. Scanning electron microscopic images were also captured using a Zeiss Scanning Electron Microscope Model EVO 18– 12 – 97. The type specimen is deposited in Botanical Survey of India, Western Regional Centre, Pune and the new name is registered with Mycobank.



Figs 1 – 9 – *Sporidesmium biligiriense* sp. nov. 1 Colonies on the host surface. 2 Conidia and conidiophores. 3 – 7 Conidia with the apical nodal structure. 8 – 9 Apical nodes. – Bars 2 = 100 μm ; 7 – 9 = 20 μm .

Results

Taxonomy

Sporidesmium biligiriense Dubey and Sengupta **sp. nov.**

Figs 1–23

Mycobank MB814426

Etymology – Species named after the place of collection “Biligiri Rangaswamy Temple Wildlife Sanctuary”.

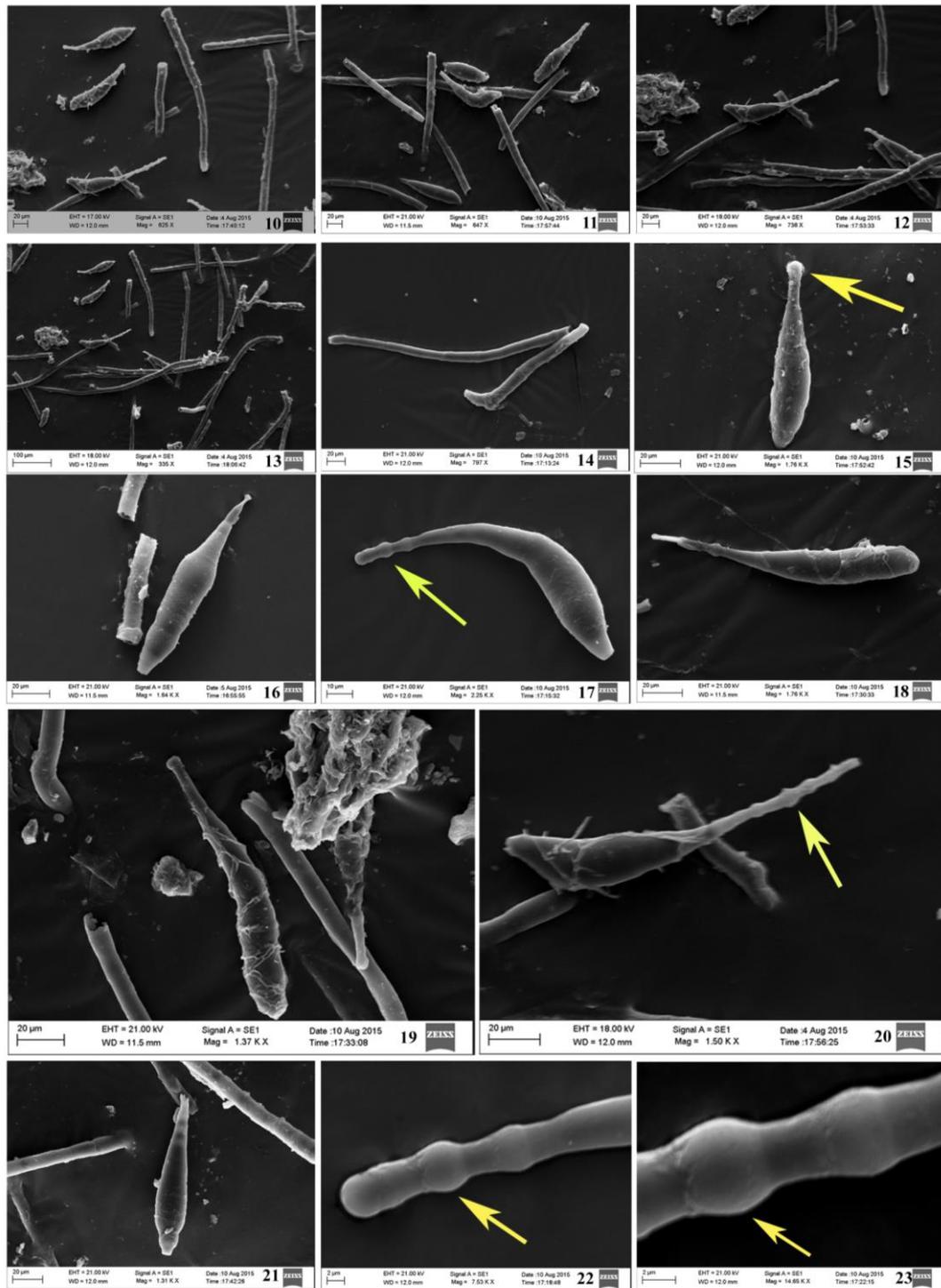


Fig. 10 – 23 – SEM images of *Sporidesmium biligiriense* sp. nov. 10 – 13 Conidia with conidiophores. 14 Conidiophores 15 – 21 Conidia (arrows indicating the apical nodal structure). 22 – 23 Apical nodal structure of conidia in higher magnification.

Mycelium mostly immersed. Setae and hyphopodia absent. Conidiophores macronematous, mononematous, single or in groups, unbranched, erect, straight or slightly flexuous, smooth, septate, brown to dark brown, up to 375 μm long, 8.5 – 11 μm thick. Conidiogenous cells monoblastic, integrated, non-percurrent. Conidia solitary, dark brown to blackish brown, straight or curved, obclavate to fusiform, base truncate, smooth, 7–9 euseptate, with wide dark bands at the

septa, 85–155 × 22–28 µm, tapering to 5 – 6 µm near the apex and 7.5 – 8.5 µm at the base, 2– 4 node-like structures present in the pale brown apical part.

Teleomorph – Unknown.

Known distribution – Biligiri Rangaswamy Temple Wildlife Sanctuary, Karnataka.

Material examined – India: Karnataka, Biligiri Rangaswamy Temple Wildlife Sanctuary, dead unidentified stem, 2 Oct 2014, Shreya Sengupta, holotype, BSI 134286.

Discussion

The genus *Sporidesmium* was established by Link in 1980 with type species *S. atrum* Link. The key features of *S. biligiriense* are simple septate conidiophores, and the solitary, gangliar, thick-walled euseptate conidia. Although the conidiophores of the new species do not proliferate, those of some species may proliferate per currently or irregularly (Subramanian 1992). Mycobank and Index Fungorum database record a total of 472 species of *Sporidesmium*. The present species differs from other species of *Sporidesmium* in having 7–9 wide dark bands at the septa and 1–4 nodes in the pale brown apical part of the conidia. The specimen is therefore described as a new species. The present species resembles *S. crassisporum* M.B. Ellis (\equiv *Ellisemia crassispora* (M.B. Ellis) Subram.) in having dark band in the conidia, but the conidia of *S. crassisporum* are distoseptate, verruculose and larger (100–250 × 18–30 µm) and are not nodulated at the apical portion. In addition, the conidiophores of *S. crassisporum* have 0–3 annellations, while the conidiophores of *S. biligiriense* are non-annellated.

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