

## ***Stilbella holubovae*, a new synnematos hyphomycete species on driftwood from the Philippines and South Africa**

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*Stilbella holubovae* is described and illustrated based on a specimen collected on submerged wood in a stream in the Philippines. The species produces parallel-determinate synnemata with white stipes and yellowish, slimy conidial masses. Relatively long phialides are produced on monochasially branching conidiophores, and produce fusoid to slightly clavate, 1–3 septate conidia 35–50 × 4–4.5 µm. The species is classified in *Stilbella* subg. *Didymostilbella*, and is most similar to *S. fusca*.

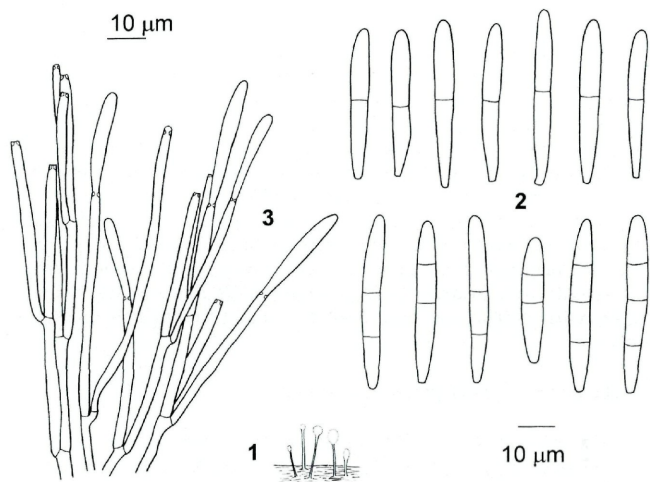
Keywords: *Stilbella*, synnemata, taxonomy, new species.

A distinctive synnematos hyphomycete was collected during a comparative study of aquatic fungi occurring on submerged wood collected from a river in Negros Occidental in the Philippines and the Palmiet River, in Durban, South Africa. The synnemata of the fungus were typical of those produced by species of *Stilbella* Lindau, but the fungus differed from previously described species in phialide and conidial dimensions (Seifert, 1985). The fungus is therefore described below as a new species.

Unless otherwise noted, microscopic structures are hyaline, with smooth, thin walls. Measurements were made from freshly prepared slides of material rehydrated in 85% lactic acid. Means are based on 25 measurements if not stated otherwise.

***Stilbella holubovae*** Seifert, S. J. Stanley & K. D. Hyde, sp. nov. – Figs. 1–6.

Synnemata cylindrico-capitata vel subulato-capitata, 300–750 µm alta, stipites albi, leves, plus minusve angusti, simplices, 20–40 µm lati; hyphae stiptis 3–4.5 µm latae in parte superiore, 4.5–11.5 µm latae prope basim stiptis. Conidiophora monochasialia, metulae cylindricae, 20–36 × 2.5–3.5 µm. Phialides



Figs. 1-3. - *Stilbella holubovae*, camera lucida drawings from the holotype. - 1. Habit sketch of synnemata. - 2. Conidia. - 3. Conidiophores and conidiogenous cells.

cylindricae vel modice subulatae, 30-54(-80)  $\mu\text{m}$  longae, 2-3  $\mu\text{m}$  latae, seu laterales seu terminales, raro terni-verticillatae. Conidiorum massa alba vel flava, globulos ad 250  $\mu\text{m}$  diam. formans. Conidia fusiformia vel modice clavata, ad basim truncata, (0-)1-3 septata, 35-50 x 4-4.5  $\mu\text{m}$ .

**Holotypus.** - PHILIPPINES: Negros Occidental, Barrio Caliban, Caliban River, on submerged wood, Dec. 1994, K. D. Hyde & E. Arimas (Holotype DAOM 214961).

**Synnemata** solitary, gregarious, or in caespitose groups of 2 or 3, 300-750  $\mu\text{m}$  tall ( $\bar{x}$  = 446 $\pm$ 19), cylindrical or subulate and capitate, the stipe white, smooth, of slender to medium stature, unbranched, about 20-40  $\mu\text{m}$  wide. - **Hyphae** of stipe interwoven at the base, parallel and unbranched in the stipe, branching at the apex to form conidiophores in a divergent capitulum; 3-4.5  $\mu\text{m}$  wide below the apex, swollen hyphae 4.5-11.5  $\mu\text{m}$  wide at the base, with slightly thickened walls. - **Conidiophore** branching generally 2 or 3 monochasial levels of phialides or metulae, sometimes with a whorl of 3 or 4 occurring, branches often appressed. - **Metulae** 20-36 ( $\bar{x}$  = 31 $\pm$ 1.5, n = 10) x 2.5-3.5  $\mu\text{m}$ , cylindrical, hyaline. - **Conidiogenous** cells phialidic, in terminal pairs or rarely whorls of 3, sometimes

single and lateral, 30–54(–80)  $\mu\text{m}$  long ( $\bar{x}$  = 44.3  $\pm$  2.0), cylindrical, sometimes slightly wavy in outline, 2–3  $\mu\text{m}$  wide, slightly narrowing at conidiogenous aperture to 1.5–2.5  $\mu\text{m}$ , periclinal thickening obvious with phase contrast, collarette inconspicuous or slightly convergent. – Conidial mass slimy, white to light yellow when dry, flame shaped, ellipsoidal, globose or cuneiform, to about 250  $\mu\text{m}$  wide. – Conidia fusiform to slightly clavate, usually straight, rarely curved, 4–5.5  $\mu\text{m}$  wide ( $\bar{x}$  = 4.8  $\pm$  0.1), predominantly 1-septate (100% in some synnemata, > 75% in other synnemata) and (20–)37–49  $\mu\text{m}$  ( $\bar{x}$  = 42.4  $\pm$  1.3), cells more or less equal in length or with basal cell longer, less often 2-septate (< 20%) and 35–47  $\mu\text{m}$ , with either the original apical or basal cell developing the second septum, or 3-septate (< 5%) and 48–50  $\mu\text{m}$  long, cells more or less equal in length, with a truncate base and a rounded apical cell, cytoplasm guttulate.

**Habitat.** – Driftwood in a stream.

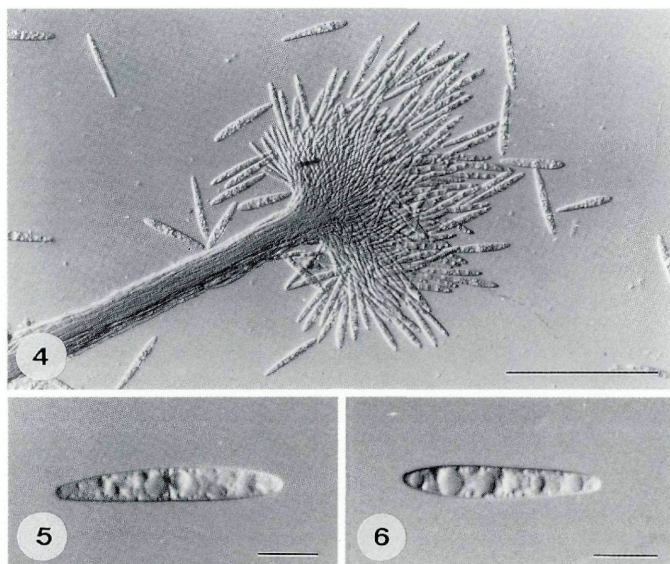
**Distribution.** – Philippines, South Africa. –

**Etymology.** – Named in memory of Dr. V. Holubová-Jechová.

**Other material examined.** – South Africa: Durban, Palmiet River, on submerged twig with bark, Nov. 1994, K. D. Hyde & T. Steinke SAPR 57, KDH 2136 (DAOM 214960).

*Stilbella holubovae* is classified in *Stilbella* subgenus *Didymostilbella* (Seifert, 1985) because of septation and shape of the conidia. It is recognized by the production of white, parallel-determinate synnemata anatomically typical of the genus *Stilbella*, a light yellow conidial mass, monochasially branching conidiophores giving rise to relatively long phialides, and fusoid to slightly clavate, (0–)1–3 septate conidia. The species is similar to *S. fusca* (Sacc.) Seifert, which has similar conidiophore branching, but shorter phialides and smaller, generally 1-septate conidia. The two species also share a similar ecology, growing on water saturated, decaying wood.

The relationship of *S. holubovae* and *S. fusca* to other species of *Stilbella* is open to question. Although the characters of all *Stilbella*-like fungi are typically hypocreaceous (Samuels & Seifert, 1987), the taxonomy for some hypocreaceous anamorph genera is based on cultural characters. Unequivocal placement of species known only from herbarium specimens is sometimes problematic. The conidia of *S. holubovae* are somewhat reminiscent of those produced by some *Cylindrocarpon* species, and a relationship with that genus is possible. *Cylindrocarpon* species are typically considered sporodochial in



Figs. 4-6. - *Stilbella holubovae*, differential interference contrast micrographs from the holotype. - 4. Apex of synnema. - 5-6. Conidia. - Scale bars; 4 = 25  $\mu\text{m}$ , 5-6 =  $\mu\text{10 m}$ .

nature (Brayford, 1992), however, and synnematosus species have so far not been assigned to that genus.

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### References

- Brayford, D. (1992). *Cylindrocarpon*. In: L. L. Singleton, Mihail, J. D. & Rush, C. M. (eds). Methods for research on soilborne phytopathogenic fungi. - American Phytopathol. Society, St. Paul, Minnesota: 103-106.

- Samuels, G. J. & K. A. Seifert (1987). Taxonomic implications of variation among hypocrealean anamorphs. In: Sugiyama, J. (ed.). Pleomorphic Fungi. The diversity and its taxonomic implications. – Kodansha, Tokyo: 29–56.
- Seifert, K. A. (1985). A monograph of *Stilbella* and allied hyphomycetes. – Stud. Mycol. 27: 1–235.

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