

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

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Seifert, K. A., S. J. Stanley & K. D. Hyde (1995). *Stilbella holubovae*, a new synnematos hyphomycete species on driftwood from the Philippines and South Africa. – *Sydowia* 47(2): 258–262.

*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*.

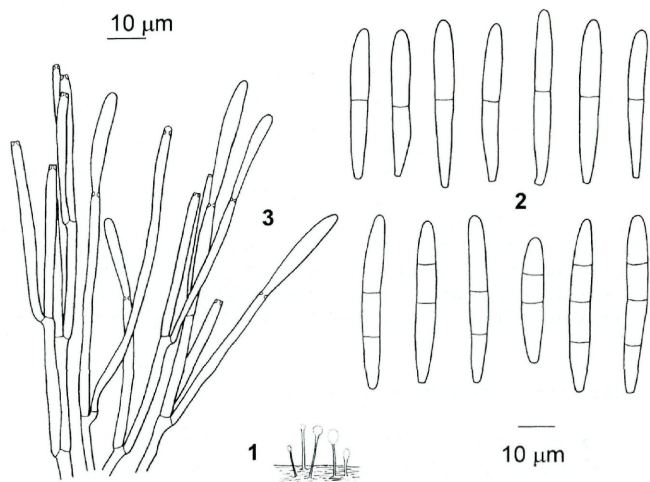
Keywords: *Stilbella*, synnemata, taxonomy, new species.

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, collarete 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.

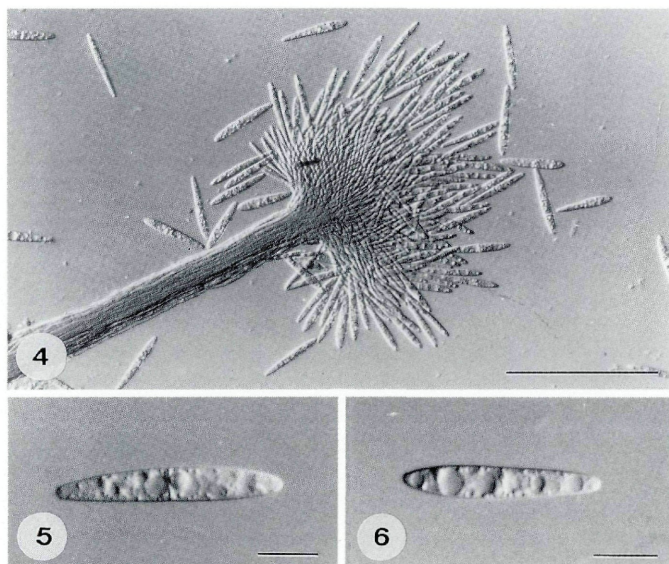
**Distribution.** – Philippines, South Africa. –

**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 fusoidal 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.

### Acknowledgments

We are grateful to Prof. W. Gams (Baarn, The Netherlands) for correcting the Latin diagnosis and to J. Bissett and S. J. Hughes (Ottawa, Canada) for critical reviews of the manuscript. Dr. Hyde would like to thank Prof. T. Steinke and the Marine Science Unit of the University of Durban Westville for a grant to visit South Africa.

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*(Manuscript accepted 17th May 1995)*

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