Trichocladium melhae sp. nov., a new tropical marine fungus

E.B. Gareth Jones*, Mohamed A. Abdel-Wahab and Lillian L.P. Vrijmoed

Department of Biology and Chemistry, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong S.A.R., P.R. China; *e-mail: bhgareth@yahoo.com

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Trichocladium melhae, a mitosporic fungus, collected frequently on wood associated with sand in Hong Kong, Malaysia and Singapore is described as a new species. The fungus is compared with other *Trichocladium* species.

Key Words: marine fungi, mitosporic fungi, taxonomy.

Introduction

We have collected and isolated a *Trichocladium* sp. similar to *T. alopallonella* from tropical marine sand on several occasions. Recently Goh and Hyde (1999) monographed *Trichocladium*, accepting 18 species and describing a number of new species. They referred another 22 *Trichocladium* names to other genera, e.g. *Bactrodesmium*, *Henispora* and *Pithomyces*. Of the species discussed by Goh and Hyde (1999) none are identical to the species collected by us and it is therefore described as a new species.

Materials and methods

Wood and sand samples collected in the intertidal zone were returned to the laboratory in plastic bags, examined, incubated in sterile plastic boxes at ambient temperature and re-examined after 4-6 weeks. Material was mounted in seawater for both spore measurements and photography. Material for SEM was prepared as described by Moss and Jones (1977). Single-spore isolation of the fungus was carried out on cornmeal seawater agar (CMA) with added antibiotics: streptomycin and penicillin G, 0.5 g L^{-1} each. The fungus formed dark brown colonies on CMA with a growth rate of 3 cm in 2-3 weeks at 25 C.

Taxonomy

Trichocladium melhae E.B.G. Jones, Abdel-Wahab and Vrijmoed, **sp. nov.** (Figs. 1-6)

Hyphae subhyalinae ad dilute brunneae, septatae, ramosae; *Coinidiophora* uni- ad pauci-cellulata, semi-macronemata 5-20 × 2-5 μm; *Conidia* ellipsoidea, fusca; cellula apicalis 6.5-13 μm longa, 4-9 μm diametro.

Etymology: from the Arabic word *melhae* meaning to grow in saline water, in reference to the marine habitat where the fungus grows.

Hyphae sub-hyaline to light brown, septate and branched. *Conidiophores* 5-20 μm long and 2-5 μm in diam. ($\bar{x}$ = 8 × 4 μm, n = 30), macronematous, simple, one (two) celled, light brown, lateral (apical), and short. *Conidia* dark brown to fuscous, and constricted at the septa (Figs. 10, 11). *Apical cell* 6.5-13 μm long and 4-9 μm in diam. ($\bar{x}$ = 8.5 × 6.5 μm, n = 52), elongated to ellipsoidal in shape, *middle cell* 4-13.5 μm long and 2.5-6 μm in diam. ($\bar{x}$ = 8 × 5 μm, n = 25) while third cell is 5-7 μm long and 4.5-5 μm in diam. (Figs. 6-9). Conidia formed on saltwater agar medium slightly smaller in dimensions; *apical cell* 5.9-11.8 μm long and 3.9-5.9 μm in diam. ($\bar{x}$ = 8.5 × 5 μm, n = 100). Solitary conidia sometimes born directly from the mycelium (Fig. 9).

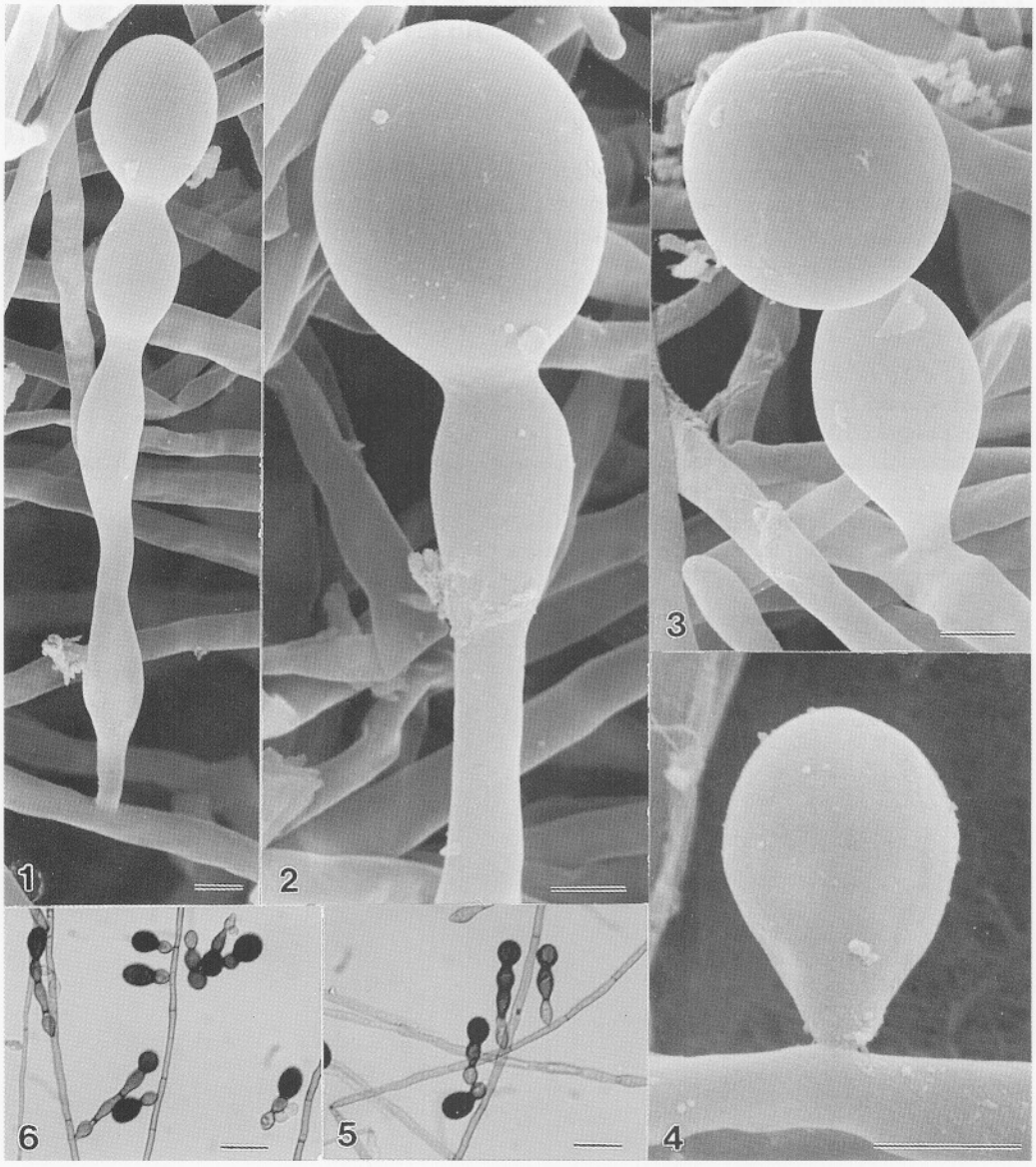
Table 1: Morphological comparisons of *Trichocladium melhae* and *T. alopallonella*

	T. melhae (This paper)	*T. alopallonella* (Kohlmeyer and Kohlmeyer, 1979)
Conidia		
Apical cell	6.5-13 × 4-9 μm	8.5-15.5 × 7-12 μm
Overall shape	Elongate ellipsoidal	Subglobose to ellipsoidal
Colour	Dark-brown	Fuscous
Number of cells	1-3	1-2
Septal constriction	Deep	Moderate
Coindiophore	1-3-celled	1-2-celled
	5-20 × 2-5 μm	3.5-6.5 × 3.5-6 μm

Holotype: HONG KONG, New Territories, Clear Water Bay, exposed mangrove wood in coastal waters, April 1999, K.L. Pang [IMI 381441].

Other material examined: Singapore, on driftwood, 12 July 1989; Singapore, Labrador, East Coast, driftwood buried in sand, 21 September and 4 October 1989; Malaysia, Morib, on sand associated with wood, 6 November (1 collection) and 14 June (3 collections) 1989 (All collections E.B.G. Jones).

The following isoltates of *T. melhae* were made: PP 3971-3974, isolated from driftwood, Singapore 1989; PP 4110-4117 Labrador Beach, Singapore, 21 September 1989; PP 4194-2005, driftwood, east Coast, Singapore, 4 October 1989; PP 5966-5968 driftwood, Taiwan, 24 May 1991.



Figs. 1-6. *Trichocladium melhae*. (from holotype). **1-4.** Scanning electron micrographs of different shapes of conidia. **5, 6.** Differential interference light micrographs of conidiophores and conidia. Bar lines: 1-4 = 2 μm; 5, 6 = 10 μm.

Trichocladium melhae has consitently been found near high seawater mark either on lignocellulosic material buried in sand at beaches or on test blocks exposed in the sea. Conidia develop on the surface of the sand grains. *Trichocladium melhae* closely resembles *T. alopallonella* however, it differs in having fuscous elongate conidia that are highly constricted at the septa and smaller (Table 1).

Acknowledgments

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