
Diplocladiella aquatica, a new hyphomycete from Brunei

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Diplocladiella aquatica sp. nov. is described and illustrated from submerged bark collected in a stream from Brunei. It differs from the other 6 species in the genus in having 10-celled conidia which are larger and have short appendages. The new species is described and illustrated, and compared with similar species.

Introduction

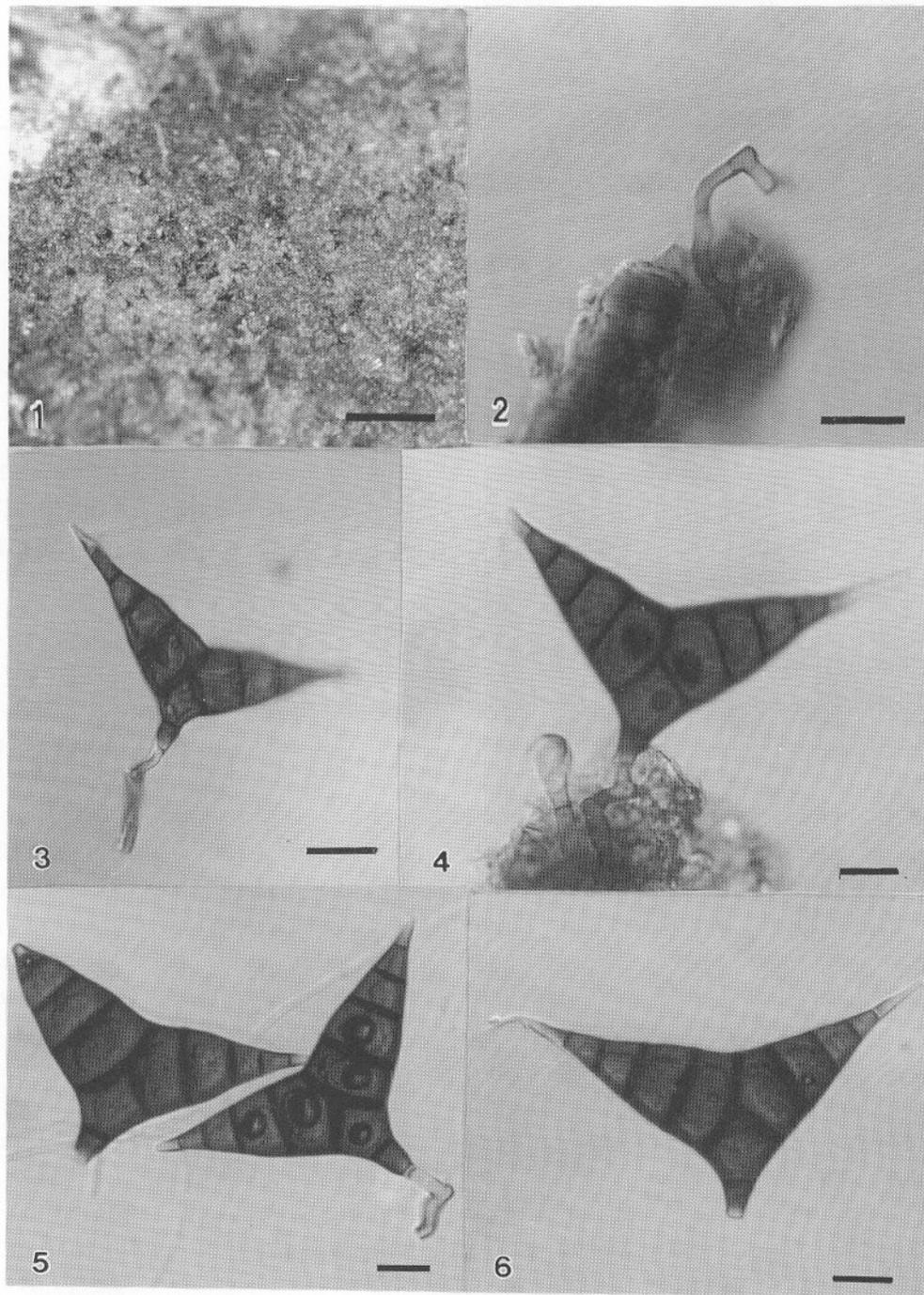
Diplocladiella is an aquatic hyphomycete genus with species occurring on submerged wood, or conidia are found aggregated in foam in freshwater streams (Nawawi, 1985a; Nawawi, 1987; Santos-Flores and Betancourt-López, 1997). The genus has a wide distribution and has been reported in Japan (Matsushima, 1975), Malaysia (Nawawi, 1987), Argentina (Cazau, Arambarri and Cabello, 1993), Puerto Rico, Cuba, and Mexico (Santos-Flores and Betancourt-López, 1997); Brunei is a new record. There are 6 accepted species: *Diplocladiella appendiculata* Nawawi (Nawawi, 1987), *D. heterospora* R. F. Castañeda (Castañeda Ruiz, 1988), *D. longibrachiata* Nawawi and Kuthub. (Santos-Flores and Betancourt-López, 1997), *D. scalaroides* Arnaud (Ellis, 1976), *D. taurina* Cazau, Arambarri and Cabello (Cazau *et al.*, 1993), and *D. tricladioides* Arnaud ex Mats. (Nawawi, 1985b). The morphology of these species has been compared by Cazau *et al.* (1993), while Santos-Flores and Betancourt-López (1997) have provided a key to the genus.

During a survey of aquatic fungi on submerged wood collected in Brunei, a further species of *Diplocladiella* was identified. *Diplocladiella aquatica* sp. nov. is distinct from other species in the genus as it has relatively large 10-celled conidia.

Taxonomy

Diplocladiella aquatica H.K. Lee, Goh and K.D. Hyde, sp. nov. (Figs. 1-6)

Etymology: "aquatica", in reference to the aquatic habitat of this fungus.



Figs. 1-6. Interference contrast micrographs of *Diplocladiella aquatica*. **1.** *Diplocladiella aquatica* on submerged bark. **2.** A conidiophore on substrate. **3, 4.** Conidia attached to conidiophores. **5.** Conidia. **6.** A conidium with long appendages. Bar: 1 = 500 μm ; 2 = 10 μm ; 3 = 20 μm ; 4-6 = 10 μm .

Mycelium partim superficiale, partim in substrato immersum, ex hyphis laevibus, pallide brunneis, septatis, 1.5-2 μm latis compositum. *Conidiophora* macronematosa, mononematosa, pallide brunnea, ad apicem pallidiora, 24-28 \times 2-3 μm . *Cellulae conidiogenae* integratae, terminales, monoblasticae, sympodiales, cicatricibus conidiorum in geniculationis conspicue praeditae. *Conidia* holoblastica, solitaria, brunnea, Y-formata, decacellularia, 9-distoseptata, ramis 2-divergentibus, symmetrica et bilateralia, axis principalis 24-34 μm longa, rami 50-70 μm longi; appendice apicalibus hyalino, 14-38 \times 2-4 μm .

Holotypus: BRUNEI DARUSSALAM, Temburong, Kuala Belalong Field Studies Centre, ad corticalis lignum submersum, 29 Aug. 1997, K.D. Hyde (HKU(M) 8260).

Mycelium partly superficial, partly immersed in the substratum, pale brown, consisting of smooth, septate, 1.5-2 μm wide hyphae. *Conidiophores* macronematous, mononematous, pale brown, paler at the apex, 24-28 \times 2-3 μm . *Conidiogenous cells* integrated, terminal, monoblastic, sympodially proliferating, bearing conspicuous conidial scars. *Conidia* holoblastic, solitary, Y-shaped, 10-celled, distoseptate, brown, bilaterally symmetrical, with two middle oblique septa separating the arms. Main axis comprising 2-cells, 24-34 μm long (\bar{x} = 28.2 μm , n = 25) \times 14-23 μm wide (\bar{x} = 18.7 μm , n = 25) (measured from the truncate base to the curvature of the arms). Basal cell lighter in colour, 4-9 \times 2.5-5 μm (\bar{x} = 7.2 \times 3.3 μm , n = 25). Arms (excluding the appendages) 50-70 μm long (\bar{x} = 60.5 μm , n = 25). Appendages arising singly from the apical cell of each arm, hyaline to pale brown, 14-38 μm long (\bar{x} = 25.4 μm , n = 25) \times 2-4 μm wide (\bar{x} = 2.7 μm , n = 25).

Discussion

The conidial morphology of *Diplocladiella aquatica*, which has 10 cells, is comparable to that of *D. taurina*, which has 8 cells. The main axis of *D. aquatica* is longer (24-34 μm) than that of *D. taurina* (10-13 μm). *Diplocladiella aquatica* is most closely related to an unnamed *Diplocladiella* species discussed by Santos-Flores and Betancourt-López (1997) from Puerto Rico, which also has 10-celled conidia. However, conidia of the Puerto Rican species are slender (5-9 μm), with shorter arms (50-55 μm) and apical, filiform appendages. The main axis of the conidium is also shorter than that of *D. aquatica*.

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