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***Arachnophora longa* sp. nov., a freshwater hyphomycete from far north Queensland, Australia**

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ABSTRACT—*Arachnophora longa*, collected from submerged wood in far north Queensland, Australia, is described and illustrated as a new species. It is distinguished from other members of the genus by possessing macroconidia with long appendages (“arms”).

KEY WORDS—anamorphic fungi, biodiversity, dematiaceous hyphomycete, lignicolous fungi, taxonomy

Introduction

During a survey of freshwater fungi on wood in streams in far north Queensland, a distinctive fungus was collected on submerged wood. The conidiogenesis and morphology of the conidia place this fungus in the genus *Arachnophora* Hennebert (Hennebert 1963). However, the fungus shows clear differences from previously described *Arachnophora* species and is therefore described as new to science.

Materials & methods

Samples of submerged wood less than 5 cm in diameter were collected from Oliver Creek, north Queensland, placed into sealed plastic bags, and returned to the laboratory. The collection site had a rocky base with shallow, running water and thick native riparian vegetation. Samples were then incubated in sterile plastic containers and regularly examined for fungi using a Leica MZ7s dissecting microscope. When noted, fungi were photographed, described, and transferred to a microscope slide with

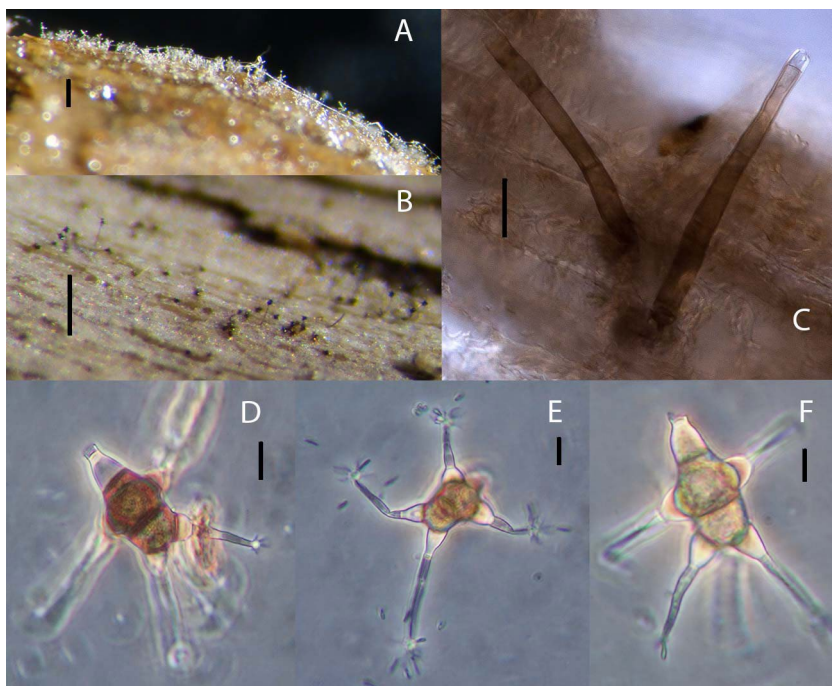


FIG. 1. *Arachnophora longa* (holotype, BRI AQ522463). A: Colonies on natural substrate while fresh. B: Colonies on natural substrate after drying. C: Conidiophores. D–F: Macroconidia with microconidial synanamorph. Scale bars: A, B = 200 µm; C–F = 10 µm.

a drop of distilled water and cover slip. This slide was examined using either a Leica DMLS compound microscope with phase contrast or a Nikon Eclipse Ni with difference interference contrast. Photographs were taken using either a Sony RX-100 or Lumenera Infinity 3 camera. Drawings were made with the assistance of a Nikon Y-IDT drawing tube at 100×.

Taxonomy

Arachnophora longa Fryar & K.D. Hyde, sp. nov.

FIGS 1, 2

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Differs from *Arachnophora combuensis* by its longer macroconidial arms and its slightly larger microconidia; and from *A. polyradiata* by its fewer but longer macroconidial arms.

TYPE: Australia, Queensland, Cape Tribulation, Oliver Creek, 16.137°S 145.440°E, on submerged wood, 7 Oct 2015, collector S. Fryar (Holotype, BRI AQ522463).

ETYMOLOGY: Latin *longa*, referring to the relatively long macroconidial arms.

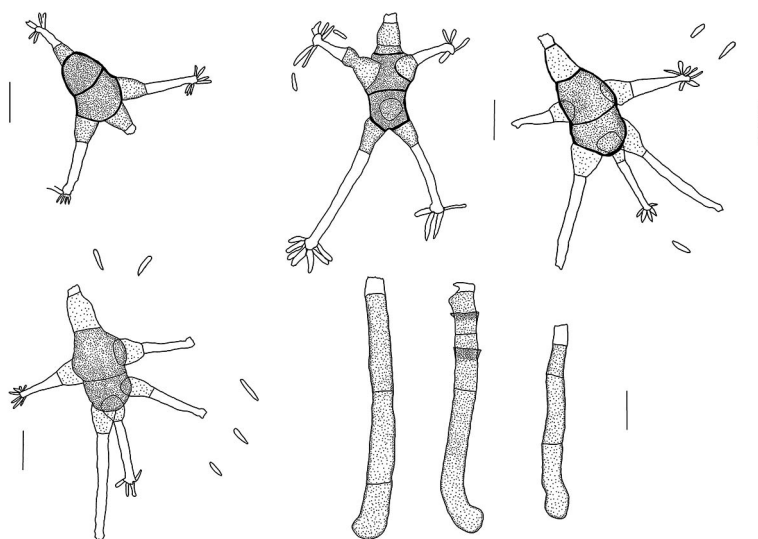


FIG. 2. *Arachnophora longa* (holotype, BRI AQ522463).
Conidiophores, macroconidia, and microconidia. Scale bars = 10 μ m.

CONIDIOPHORES macronematous, mononematous, brown, erect, unbranched, cylindrical, smooth, 1–4-septate, no constrictions at the septa, with percurrent proliferation, slightly bulbous at the base, single, $46\text{--}102 \times 5\text{--}7.5 \mu\text{m}$. CONIDIOGENOUS CELLS monoblastic, integrated, terminal, cylindrical, smooth, pale brown to hyaline. MACROCONIDIA staurosporous, acrogenous, solitary, brown, dry, smooth, complex, composed of [i] a basal cell that is obconical, truncate, pale brown, and with a minute basal frill as a result of rhexolytic dehiscence and [ii] an irregular two-celled central body of $17\text{--}23 \times 11\text{--}19 \mu\text{m}$; each central cell giving rise to 1–3 brown to pale brown lateral cells, $6\text{--}9 \times 5\text{--}9 \mu\text{m}$, each in turn giving rise to a single fertile, tapering, hyaline arm, $16\text{--}43 \times 2\text{--}3 \mu\text{m}$, usually aseptate (occasionally 1-septate), 3–5 arms per macroconidium. SYNANAMORPH: the apical cell of each macroconidial arm producing hyaline, aseptate, $5\text{--}10 \times 1 \mu\text{m}$, fusiform to clavate microconidia with minute denticles at their tip.

COMMENTS – *Arachnophora* was established by Hennebert (1963) for the type species, *A. fagicola*, growing on decaying cupules of *Fagus sylvatica*. Currently, there are ten species recognized in the genus. Of these species, *A. longa* most

resembles *A. polyradiata*, which differs by its longer ($\leq 150 \mu\text{m}$) conidiophores and more numerous (5-7) and shorter (15-20 μm) macroconidial arms (Mercado Sierra & Castañeda Ruíz 1984, Castañeda Ruíz & al. 1997). Three species—*A. fagicola*, *A. pulneyensis*, *A. uberisporoides*—do not produce a synanamorph (Hennebert 1963, Subramanian & Bhat 1987, Castañeda Ruiz & al. 1997) and are therefore distinct from *A. longa*. Macroconidia of *A. combuensis*, *A. crassa*, *A. dinghuensis*, *A. goanensis*, *A. hughesii*, and *A. polybrachiata* have fewer and shorter arms than *A. longa*, among other distinguishing characters (Révay & Gönczöl 1989, Castañeda Ruiz & Guarro 1999, Pratibha & al. 2011, Leão-Ferreira & al. 2013, Ma & al. 2014, Monteiro & al. 2014).

Arachnophora species are usually found on decaying leaves, wood, bark, or pods on forest floors (e.g., Kirk 1981, Matsushima 1993, Castañeda Ruiz & al. 1997, Pratibha & al. 2011, Ma & al. 2014). However, there have previously been reports of this genus on submerged wood in freshwater habitats (Tsui & al. 2000, Monteiro & al. 2014).

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Literature cited

- Castañeda Ruiz RF, Guarro J. 1999 [“1998”]. Two new hyphomycetes from rainforests of Cuba. Canadian Journal of Botany 76(9): 1584-1588. <https://doi.org/10.1139/b98-095>
- Castañeda Ruiz RF, Gams W, Saikawa M. 1997. Three new conidial fungi (hyphomycetes) from Cuba. Nova Hedwigia 64: 473-483.
- Hennebert GL. 1963. Un hyphomycète nouveau *Arachnophora fagicola* gen. nov. spec. nov. Canadian Journal of Botany 41(8): 1165-1169. <https://doi.org/10.1139/b63-097>
- Kirk PM. 1981. New or interesting microfungi I. Dematiaceous hyphomycetes from Devon. Transactions of the British Mycological Society 76: 71-87. [https://doi.org/10.1016/S0007-1536\(81\)80010-1](https://doi.org/10.1016/S0007-1536(81)80010-1)
- Leão-Ferreira SM, Gusmão LFP, de Almeida DAC, Castañeda Ruiz RF. 2013. Conidial fungi from the semi-arid Caatinga biome of Brazil. Three new species and new records. Nova Hedwigia 96: 479-494. <https://doi.org/10.1127/0029-5035/2013/0084>
- Ma J, Xia JW, Zhang XG, Castañeda Ruiz RF. 2014. *Arachnophora dinghuensis* sp. nov. and *Websteromyces inaequale* sp. nov., and two new records of anamorphic fungi from dead branches of broad-leaved trees in China. Mycoscience 55(5): 329-335. <https://doi.org/10.1016/j.myc.2013.11.007>
- Matsushima T. 1993. Matsushima Mycological Memoirs. 7; 75 p. Published by the author, Kobe
- Mercado Sierra Á, Castañeda Ruiz RF. 1984. *Cacahualia polyradiata*, un hifomicete nuevo con conidios estauosporicos. Revista del Jardín Botánico Nacional, Universidad de la Habana (5)1: 89-101.

- Monteiro J, Gusmão LFP, Castañeda Ruiz RF. 2014. A new species of *Arachnophora* from submerged wood in the Amazon rainforest, Brazil. *Mycotaxon* 128: 127–130. <https://doi.org/10.5248/128.127>
- Pratibha J, Bhat DJ, Raghukumar S. 2011. Four anamorphic fungi (with two new species) from forests of Western Ghats, India. *Mycotaxon* 117: 269–278. <https://doi.org/10.5248/117.269>
- Révay A, Gönczöl J. 1989. Some dematiaceous hyphomycetes from woody-litter in Hungary. *Nova Hedwigia* 48: 237–245.
- Subramanian CV, Bhat DJ. 1987 Hyphomycetes from South India I. Some new taxa. *Kavaka* 15: 41–74.
- Tsui CKM, Hyde KD, Hodgkiss IJ. 2000. Biodiversity of fungi on submerged wood in Hong Kong streams. *Aquatic Microbial Ecology* 21: 289–298. <https://doi.org/10.3354/ame021289>