

TWO UNUSUAL HYPHOMYCETES FROM LITTER

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Abstract

Amphichaetella echinata is recorded for the first time in Queensland from two collections of leaf litter, and additional host and locality records for *Cryptocoryneopsis umbraculiformis* are reported.

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Introduction

Studies on leaf litter microfungi have revealed two unusual species of hyphomycetes which are reported here, one apparently for the first time in Australia. Samples of plant litter, usually leaves but occasionally other parts such as the branchlets of *Allocasuarina*, were collected and immediately placed into small plastic bags. Small subsamples subsequently were incubated in Petri dish moist chambers containing sterilised blotting paper moistened with distilled water, on a laboratory bench at room temperature. Cultures were established from some collections in which sporulation on the natural substratum was sparse by transferring conidia aseptically onto potato dextrose agar (PDA) plates, to provide sufficient material for further study and voucher specimens.

Amphichaetella echinata (Kleb.) Höhn. (Figure 1)

This rarely reported sporodochial hyphomycete was redescribed and illustrated by line drawings from the type collection on *Licuala* leaves from Java by Morgan-Jones (1973), who cited no additional hosts or localities. Other recorded hosts include *Artocarpus integrifolia* Linn. f. from India (Nag Raj & Govindu 1969), *Pouteria boninensis* (Nakai) Baehni from Japan (Katamoto & Harada 1979, as the new genus and species *Chaetospermopsis boninensis* Katum. & Y. Harada), and *Smilax* sp. (BPI 405022), *Trachycarpus fortunei* H. Wendl. and *Platycladus orientalis* (L.) Franco (Miller 1994) from the U.S.A. The record for Japan subsequently was corrected and *Chaetospermopsis boninensis* put into synonymy with *Amphichaetella echinata* (Harada & Katamoto 1981). In the Australian collections sporodochia developed very sparingly in moist chambers, but cultures were obtained by direct transfer of spore masses onto PDA plates. Conidia from the host are somewhat larger with longer appendages than recorded for the type collection (Table 1), but are similar to those in the Indian material (Nag Raj & Govindu 1969). There is no previous record for *Amphichaetella echinata* in the specimen database of the Australian National Collection of Fungi (R.G. Shivas, pers. comm. 2002). The genus *Amphichaetella* is monotypic.

Table 1. Dimensions (μm) of conidia and accessory structures in *A. echinata*.

	Conidia	Polar papillae	Appendage length
Morgan-Jones *	15–23 \times 8–10	2 \times 1.5–2	11–14
Nag Raj & Govindu	14–24 \times 5–9	2–3 diam.	11–24
BRIP 26834c	18–25 \times 8–14	2–3 \times 2.5–3	10–25
BRIP 29138b	18–25 \times 9.5–15	2–3 \times 2.5–3	15–30

*data from type collection

Primary cultures on PDA sporulated after 20 days, producing many limoniform conidia identical with those from the host and some mostly fusiform aberrant types 30–50 (–60) \times 6–10 (–14) μm , sometimes with the polar papillae elongated into cylindrical extensions up to 9 μm long. Colonies are appressed/submerged with little aerial mycelium, off-white in colour and comparatively rapidly growing, with a daily radial increase of approximately 4 mm at c. 25°C. No teleomorph formed when the two Queensland isolates were paired on Sachs agar + maize leaf or water agar + wheat straw, or in single-isolate cultures on these media.

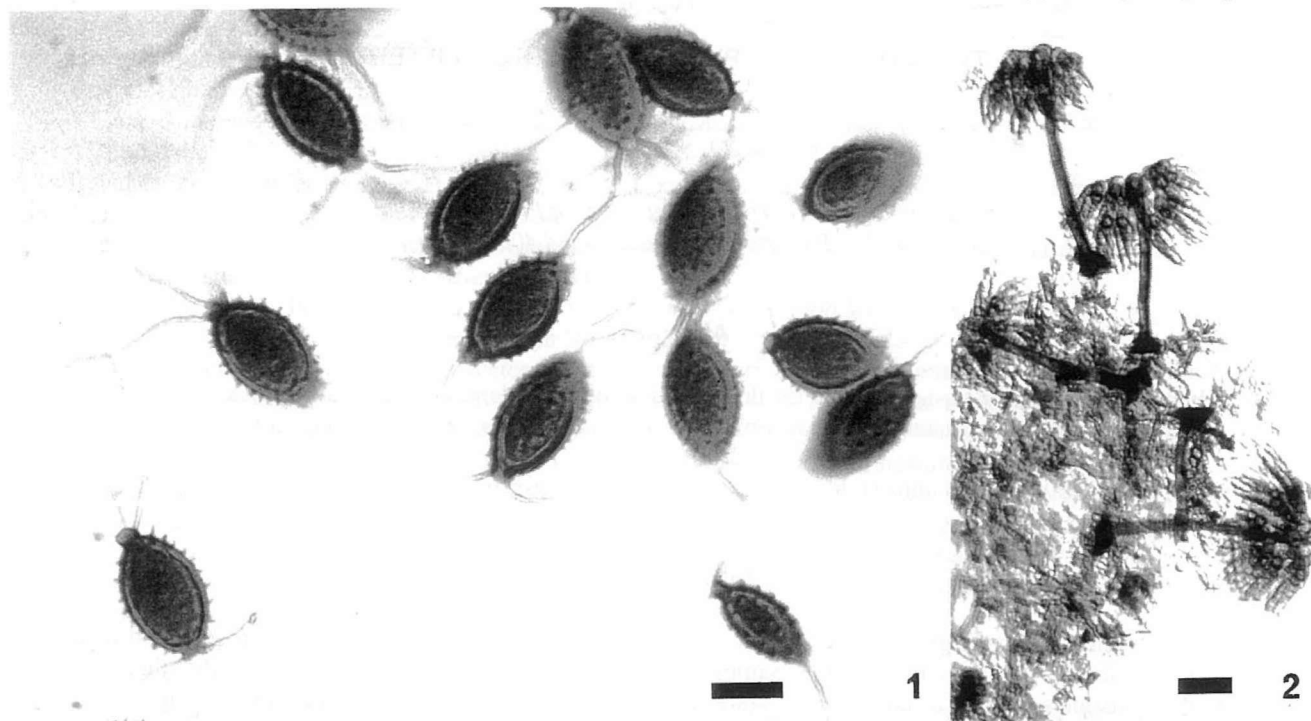
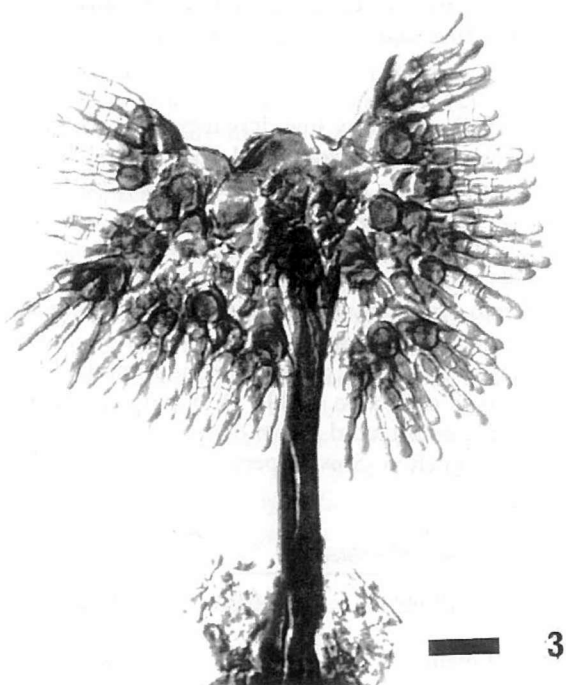


Figure 1. *Amphichaetella echinata*, conidia (BRIP 29138b).



Figures 2 & 3. *Cryptocoryneopsis umbraculiformis*, conidiophores and conidia, in fig. 3 partially crushed to demonstrate details of conidium structure (BRIP 29134b). Bars: 10 μ m, figs 1, 3; 20 μ m, fig. 2.

Specimens examined: *Taxodium distichum* (L.) Rich., Indooroopilly, Qld, DPI grounds, J.L. Alcorn 2082c, 25 Nov. 1999, BRIP 26834c; *Callistemon viminalis* (Sol. ex Gaertn.) G. Don ex Loudon, Rafting Ground Road, Brookfield, Qld, J.L. Alcorn 2178b, 15 Dec. 2001, BRIP 29138b.

Cryptocoryneopsis umbraculiformis B. Sutton (Figures 2, 3)

This monotypic genus was described in 1980, based on two collections from dead *Banksia* leaves in south-eastern Queensland (Sutton 1980). Subsequently the fungus was reported from phyllodes of two *Acacia* spp. and an unidentified collection of leaf litter from the far north-west of the State (Alcorn 1998). Colonies on PDA are reddish brown above, much darker below, with fine centrally raised aerial mycelium and submerged margins. Growth rate is very slow, with a radial increase of 4–6 mm in one month at c. 25°C, and sporulation occurs

sparsely within the aerial mycelium. The collections cited below extend the previously known host and geographic ranges of this species.

Specimens examined: *Allocasuarina fraseriana* (Miq.) L.A.S. Johnson, Two Peoples Bay Reserve near Albany, W.A., *J.L. Alcorn 2172b*, 24 Sept. 2001, **BRIP** 29134b; *Allocasuarina nana* (Spreng.) L.A.S. Johnson, Princes Rock Lookout near Wentworth Falls, N.S.W., *J.L. Alcorn 2205a*, 13 May 2002, **BRIP** 29281a.

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