
Two new species of *Dactylaria* (anamorphic fungi) from Australian rainforests and an update of species in *Dactylaria sensu lato*

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Paulus, B., Gadek, P. and Hyde, K.D. (2003). Two new species of *Dactylaria* (anamorphic fungi) and an update of species in *Dactylaria sensu lato*. *Fungal Diversity* 14: 143-156.

The new species *Dactylaria belliana* and *D. ficusicola* were isolated from leaf litter of an Australian tropical rainforest. *Dactylaria belliana* differs from other species within this genus in having narrowly fusiform, uniseptate conidia and pigmented, denticulate conidiophores. *Dactylaria ficusicola* is similar in morphology to *D. hemibeltranioidea* but differs in producing only cylindrical narrow conidia while the latter species also has fusiform and naviculate conidia. The new species are described and illustrated here. A synopsis of species described in *Dactylaria sensu de Hoog* since the review by Goh and Hyde (1997) is provided based on the literature.

Key words: *Diplorhinostrichum*, *Mirandina*, *Pleurophragmium*, saprobic microfungi, tropical rainforest

Introduction

As part of an ongoing study to estimate microfungal diversity in decaying leaves of four rainforest tree species in a tropical rainforest in Queensland, Australia, two species of *Dactylaria* were found which we consider new to science. These are described and illustrated in this paper.

Dactylaria is a large and heterogeneous genus. The species mainly occur on rotting terrestrial and submerged vegetation (Cai *et al.*, 2002; Promputtha *et al.*, 2002) and decaying wood and bark (Goh and Hyde, 1997; Tsui *et al.*, 1997; Hyde and Goh, 1998; Gené *et al.*, 2000), but the genus includes foliicolous plant pathogens, animal disease agents, fungicolous hyperparasites and nematophagous species (Goh and Hyde, 1997). *Dactylaria* was redefined by de Hoog (1985) who considered *Dactylaria* and similar genera to be artificial, but recognized 41 species in four subdivisions, i.e. *Dactylaria*, *Diplorhinostrichum*,

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Mirandina and *Pleurophragmium*. A recent review by Goh and Hyde (1997), based on literature, provided a key to a further 37 species. Despite these contributions, the taxonomy of *Dactylaria* and allied genera remains complex. De Hoog's broad generic concept of *Dactylaria* was not accepted by some mycologists who preferred to retain the genera *Mirandina* and *Pleurophragmium*. They have described a small number of species within *Mirandina* (Matsushima, 1987, 1996; Castañeda Ruiz and Kendrick, 1991; Castañeda Ruiz *et al.*, 1997) and *Pleurophragmium* (Matsushima, 1985, 1987, 1993, 1995, 1996). A further 14 species have been described in *Dactylaria* since the publication of Goh and Hyde (1997). A synopsis of 24 accepted species in *Dactylaria sensu lato*, which have not previously been included in a key, is presented here based on the literature.

Materials and methods

The study site comprises upland rainforest in the vicinity of Bellenden Ker National Park near Topaz, Queensland, Australia (17°24'00"S, 145°43'30"E) at an altitude of approximately 700 m. The forest of the site has been classified as complex mesophyll rainforest (Type 1b rainforest; Tracey, 1982) and has a high diversity of tree species. Decaying leaves were collected randomly from a 7 × 7 m quadrat under trees of *Ficus pleurocarpa* and *Opisthiolepis heterophylla*. The leaves were returned to the laboratory within three hours in seal lock plastic bags in a cool box.

Isolates of *Dactylaria belliana* and *D. ficusicola* were obtained using a particle filtration protocol (Kirby and Webster, 1990; Bills and Polishook, 1994; Paulus *et al.*, 2003) and directly from the leaf following incubation in a chamber containing tissue paper moistened with sterile distilled water (Booth, 1971). Isolates of both species were grown on Malt Yeast Agar (MYA, Gams *et al.*, 1998) for colony description and on Potato Carrot Agar (PCA; Johnston and Booth, 1983), which included a small piece of double sterilised straw and banana leaf, to encourage sporulation. Cultures were incubated under a 12-hour dark/light cycle under black light. Conidiophores and conidia were removed under a stereomicroscope and semi-permanent slides were prepared in 90% lactic acid. The range of measurements was derived from examining a minimum of 30 conidia, 20 conidiophores and 20 conidiogenous cells of fresh material mounted in lactic acid. Cultures and specimens were deposited in the Queensland Herbarium of the Department of Primary Industries (BRIP).

Results

A summary of the key features of all *Dactylaria* species published since 1997 and of *Mirandina* and *Pleurophragmium* species published since 1985 are provided in Table 1 and 2. Drawings of the conidia are given in Figs. 1-24.

Table 1. Species of *Dactylaria* described post Goh and Hyde (1997).

Species	Conidial shape	Conidial size (μm)	Conidial colour	Conidiophore
<i>Dactylaria asymmetrica</i> Pasqualetti, <i>Mycotaxon</i> 72: 27 (1999)	Clavate, rounded upper end and narrowed base, one supramedian septum	15-20 \times 3-4.5	Sub-hyaline	Pale brown or brown
<i>D. belliana</i> B. Paulus, P. Gadek & K. D. Hyde sp. nov.	Narrowly fusiform, base truncate, apex narrowly obtuse, 1-septate	20-26 \times 1-2	Hyaline	Brown, conspicuous cylindrical denticles
<i>D. biguttulata</i> Goh & K.D. Hyde, <i>Fungal Diversity</i> 3: 64 (1999)	Clavate to ellipsoidal, 1-septate	15-20 \times 3.5-4	Hyaline	Hyaline, subulate, denticles spine-like
<i>D. cazorlii</i> Mercado, Gené & Guarro, <i>Mycol. Res.</i> 104: 1404 (2000)	Ellipsoid or subclavate, often slightly curved, (3-)4-6(-7)-septate	18-23 \times 3.5-4.5	Pale brown	Brown, unbranched, conspicuous denticles
<i>D. ficusicola</i> B. Paulus, P. Gadek & K. D. Hyde sp. nov.	Cylindrical, base conicotruncate, apex obtuse, aseptate	12-15 \times 1.5-2(-2.5)	Hyaline	Brown, apex often inflated, denticles inconspicuous
<i>D. filiformis</i> Castañeda, Guarro & Cano, <i>Mycotaxon</i> 58: 254 (1996)	Filiform, aseptate	15-22 \times 1	Hyaline	Pale brown, subulate, cylindrical toward the apex
<i>D. flammae</i> Pinnoi, E.B.G. Jones, McKenzie & K.D. Hyde <i>Mycoscience</i> in press	Cylindrical, 0-1-septate, with an apical, flame-like appendage	42.5-62.5 \times 4.5-5	Hyaline	Brown, conidiogenous cell hyaline, many cylindrical denticles
<i>D. hyalotunicata</i> K.M. Tsui, Goh & K.D. Hyde, <i>Sydowia</i> 49: 182 (1997)	Naviculate to fusiform with gelatinous sheath, 1-septate	20-25 \times 2.5-3	Hyaline	Hyaline, denticles cylindrical

Table 1 (continued).

<i>D. lakebarrensis</i> Goh & K.D. Hyde, <i>Mycol. Res.</i> 102: 741 (1998)	Fusiform, conical or conically rounded at apex, obconical at base, 3-septate	(18-)20- 27 × (3.5-)4-5	Pale olivaceous	Dark olivaceous brown, upper part denticulate
<i>D. obclavata</i> Castañeda, Guarro & Cano, <i>Mycotaxon</i> 58: 254 (1996)	Obclavate, sometimes cylindrical, 3-septate	15-21 × 2-3	Pale brown to subhyaline	Brown denticles, conspicuous and cylindrical
<i>D. obscuriseptata</i> Goh & K.D. Hyde, <i>Fungal Diversity</i> 3: 65 (1999)	Allantoid to ellipsoidal; subapiculate or obconic toward the base, obtuse at apex, indistinctly 2-3 septate	10-13 × 3.5-4.5	Hyaline	Pale to medium brown, denticles pointed and spine- like, two septa at base of conidiophore
<i>D. palmae</i> Pinnoi, E.B.G. Jones, McKenzie & K.D. Hyde <i>Mycoscience</i> in press	Fusiform, sometimes constricted at septum, 1-septate	23.8-25 × 3.8-5	Hyaline	Brown, hyaline conidiogenous cell, sometimes branched, many cylindrical denticles
<i>D. plovercovensis</i> Goh & K.D. Hyde, <i>Fungal Diversity</i> 3: 67 (1999)	Clavate to elongate- ellipsoidal, broadly rounded at apex, obconic at base, 3-septate	16-22 × 4-4.5(-5)	Pale to medium brown	Pale to medium brown, denticles cylindrical
<i>D. uliginicola</i> Pinnoi, E.B.G. Jones, McKenzie & K.D. Hyde <i>Mycoscience</i> in press	Fusiform, apex acutely rounded, base similar but slightly truncate, 0- 1-septate	21-28 × 3-4.5	Hyaline	Hyaline, unbranched, many cylindrical denticles

***Dactylaria belliana* B. Paulus, P. Gadek & K.D. Hyde, sp. nov.**

(Figs 25, 27-29)

Etymology: ‘belliana’ referring to New Zealand mycologist Dr Ann Bell

Ad fungos conidiales, hyphomycetes pertinens. *Coloniae* pallidae brunneae vel griseolae, margine cremeo, hyphae 2-3.5 µm latae. *Conidiophorae* macronematae, mononematae, ex hyphis repentibus vel funiculis hypharium, plerumque non ramosae, brunneae, apicem versus pallide brunneae vel hyalinae, cylindricae cum apicibus plerumque inflatis, 0-5-septatae, flexuosae, laeviae, interdum in cellulam conidiogenam reductae, 10-60 × 2-3.5(-4) µm. *Cellulae conidiogenae* polyblasticae, incorporateae, terminales versus intercalares, cylindricae vel inflatae, pallidae brunneae vel subhyalinae, 4-10 × 2-5 µm, cum denticulis conspicuis cylindricis praeditae. *Conidiae* fusiformiae, ad basim truncatae, ad apicem leviter obtusae, 1-septatae, laeviae, siccae, incoloratae, 20-26 × 1-2 µm.

Table 2. Species of *Mirandina* and *Pleurophragmium* described post de Hoog (1985).

Species	Conidial shape	Conidial size (μm)	Conidial Colour	Conidiophore
<i>Mirandina arnaudii</i> P.M. Kirk, <i>Trans. Br. Mycol. Soc.</i> 86: 423 (1986)	Filiform, rounded apex, truncate base, aseptate	18-24 \times 1-1.5	Hyaline	Brown, base inflated
<i>M. flagelliformis</i> Matsush., <i>Matsush. Mycol. Mem.</i> 5: 19 (1987)	Narrowly obclavate, rostrate, some cells inflated and restricted at septa, 5-11 septate	40-100 \times 2.5-4	Hyaline	Hyaline, elongate, 0-2 septate, denticles along conidiophore axis
<i>M. fragilis</i> Castañeda & Kendrick, <i>Univ. Wat. Biol. Ser.</i> 35: 73 (1991)	Cylindrical to filiform, sometimes fusiform, curved or hooked at base, aseptate	13-17 \times 1-1.5	Hyaline	Brown, narrowly geniculate at apex, denticles inconspicuous, appear to be tapering
<i>M. speciosa</i> R.F. Castañeda, Guarro & Cano, <i>Mycotaxon</i> 65:125 (1997)	Fusiform to falcate, truncate at base, aseptate	9-12 \times 0.5-1	Hyaline	Brown, inconspicuous, apparently tapering denticles
<i>M. taiwanensis</i> Matsush., <i>Matsush. Mycol. Mem.</i> 5: 20 (1987)	Cylindrical or cylindrical fusiform, apex rounded, base narrowly truncate, 6-15-septate	45-120 \times 4-6	Pale brown centrally, subhyaline end cells	Fuscos or paler, simple, conical denticles along conidiophore axis
<i>Pleurophragmium angamosense</i> Matsush., <i>Matsush. Mycol. Mem.</i> 8: 30 (1995)	Fusiform, slightly curved or straight, shed by rhexolytic secession, 5-septate	24.5-40 \times 5-7	Fuscous, paler terminally	Brown
<i>P. malaysianum</i> Matsush., <i>Matsush. Mycol. Mem.</i> 9: 20 (1996)	Cylindro-clavate, apex rounded, base protruding, 3-10 pseudosepta	(20-) 40- 75 \times 4-5	Hyaline	Hyaline
<i>P. obcampanuloides</i> Matsush., <i>Matsush. Mycol. Mem.</i> 8: 30 (1995)	Obpyriform to turbinate, (1-) 2-septate	(10-) 11.5-15.5 (-18) \times 5.0-6.5	Pale olive, olivaceous in mass	Brown at base

Table 2 (continued).

<i>P. peruamazonicum</i> Matsush., <i>Matsush. Mycol. Mem.</i> 7: 61 (1993)	Cylindrical, apex rounded, base narrow, 2-septate	18-30 × 4-6	Central cell pale brown, terminal cells subhyaline, pale fuscous in mass	Brown
<i>P. peramazonicum</i> var. <i>inflatum</i> Matsush., <i>Matsush. Mycol. Mem.</i> 7: 61 (1993)	Ovoid, apex rounded, base, base narrow, lower part inflated, (1-)2-septate	1 septate: 13-20 × (5-)6-9(-10) 2 septate: 17-28 × (5-)6-9(-10)	Lower cell dark coloured, apical cell subhyaline	Brown

Colonies on MYA light brown to grey with cream margin, subfelty, reverse light brown with cream margin, no pigment in agar, slow growing, hyphae subhyaline to light brown, 2-3.5 µm wide. *Conidiophores* macronematous, mononematous, arising from trailing hyphae or ropes of hyphae, mostly unbranched, brown, becoming light brown or hyaline towards the apex, cylindrical with apex sometimes inflated, often thick-walled at base, 0-5-septate, flexuous, smooth, sometimes reduced to conidiogenous cells, 10-60 × 2-3.5(-4) µm. *Conidiogenous cells* polyblastic, sympodial, integrated, terminal becoming intercalary, cylindrical or inflated, light brown to subhyaline, 4-10 × 2-5 µm, with conspicuous, cylindrical denticles, up to 1 µm wide. *Conidia* narrowly fusiform, base truncate and apex narrowly obtuse, 1-septate, septa visible in cotton blue, smooth, dry, hyaline, 20-26 × 1-2 µm (\bar{x} = 23.3 × 1.5 µm; length:width ratio of 15.5:1).

Teleomorph: unknown.

Habitat: on decaying leaves of *Opisthiolepis heterophylla* and *Ficus pleurocarpa*.

Known Distribution: Australia.

Material examined: AUSTRALIA, Queensland, Atherton Tablelands, Old Boonjee Road, on decaying leaves of *Opisthiolepis heterophylla*, 20 April 2001, B. Paulus (BRIP 29230, living culture, **holotype**); AUSTRALIA, Queensland, Old Boonjee Road, on decaying leaves of *Ficus pleurocarpa* (BRIP 29322).

Notes: Our isolate of *D. belliana* could be included in section *Mirandina sensu de Hoog* (1985) based on its brown erect conidiophores, its short cylindrical denticles and the length to width ratio of its conidia. Within this section, *D. belliana* resembles *D. fusiformis* Shearer & Crane most closely in terms of conidial shape. Our species differs in having 1-septate conidia as compared to the 3-septate conidia of *D. fusiformis*. In addition, the pigmented conidiophores of *D. belliana* are shorter and have more pronounced denticles

than those of *D. fusiformis*. Other species, which are similar to *D. belliana* in conidial shape are *D. acerosa* Matsush., *D. monticola* R.F. Castañeda & W.B. Kendr., *D. leptosphaeriicola* U. Braun & Crous and *D. xinjangensis* Z. Jiao, X.Z. Liu & Y.T. Wang. However, our species differs from *D. acerosa* in having 1-septate rather than 3-septate conidia as well as pigmented, robust conidiophores and from *D. monticola* in having distinctly shorter conidia and pigmented conidiophores. It differs from *D. leptosphaeriicola* in conidial size as well as being symmetrical in both planes and from *D. xinjangensis* in the number of septa, in conidial size and in having conspicuous denticles (Table 1).

***Dactylaria ficusicola* B. Paulus, P. Gadek & K.D. Hyde sp. nov.**

(Figs 26, 30-31)

Etymology: ‘ficusicola’ referring to the frequent occurrence of this fungus on decaying leaves of *Ficus pleurocarpa*

Ad fungos conidiales, hyphomycetes pertinens. *Coloniae* brunneae, lentae crescentibus. *Conidiophorae* macronematae, mononematae, conspicuae, erectae, rectae, robustae, crassi-tunicatae, apicem versus leniter attenuatae, non ramosae, ad basim atrobrunneae, ad apicem pallide brunneae vel hyalinae, laeviae, multiseptatae, 30-180 µm altae et 2-9 µm latae. *Cellulae conidiogenae* polyblasticae, sympodiales, integratae, terminales, 4-10 × 2-5 µm, plerumque inflatae, pallide brunneae vel hyalinae, cum denticulis cylindricis. *Conidiae* cylindricae, ad basim conico-truncatae, ad apicem obtusae, hyalinae, nonseptatae, laeviae, siccae, 12-15 × 1.5-2(-2.5) µm

Colonies on MYA brown, minimal aerial mycelium, reverse brown, slow growing. *Conidiophores* macronematous, mononematous, conspicuous, erect, straight, robust, thick-walled, tapering towards the apex, unbranched, dark brown base with light brown to hyaline apex, smooth, multiseptate, tall and short conidiophores present, 30-180 × 2-9 µm. In PCA conidiophores subhyaline to brown, mostly thin-walled, flexuous, cylindrical or inflated, variously shaped, often reduced to conidiogenous cell, 10-70 × 2.5-3.5 µm. *Conidiogenous cells* polyblastic, sympodial, integrated, terminal, 4-10 × 2-5 µm, tapering or inflated, light brown or hyaline, with cylindrical denticles less than 1 µm wide. In PCA conidiogenous cells cylindrical or inflated, subhyaline or hyaline, terminal or becoming intercalary. *Conidia* cylindrical, base conico-truncate and apex obtuse, hyaline, aseptate, smooth, dry, 12-15 × 1.5-2(-2.5) µm (\bar{x} = 13.3 × 2 µm). In PCA conidia 10-16 × 2-2.5 µm (\bar{x} 14.7 × 2.1 µm).

Teleomorph: unknown.

Habitat: on decaying leaves of *Ficus pleurocarpa*.

Known Distribution: Australia.

Material examined: AUSTRALIA, Queensland, Atherton Tablelands, Old Boonjee Road, on decaying leaves of *Ficus pleurocarpa*, 20 February 2002, B. Paulus (BRIP29304 **holotype**); *ibid.* (BRIP38623).

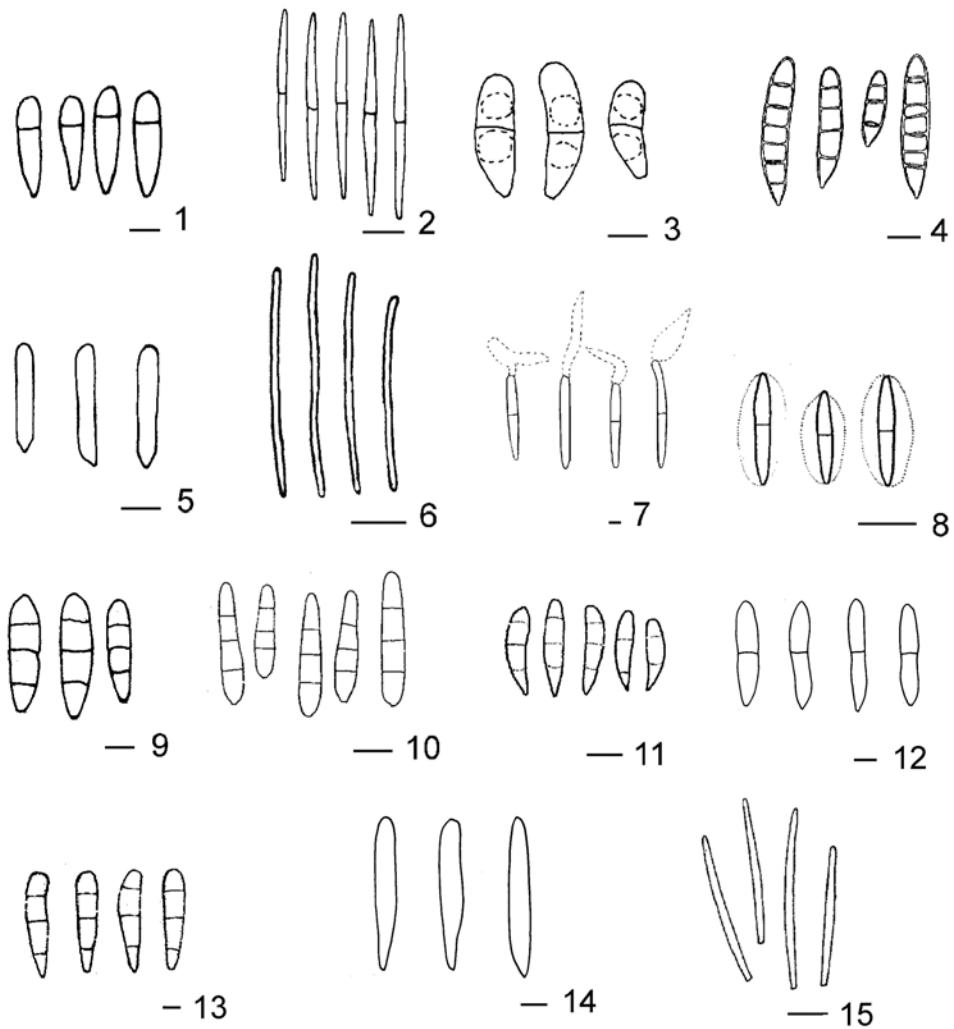
Notes: The most appropriate placement of *D. ficusicola* is in section *Diplorhinotrichum* on the basis of its erect, brown conidiophores with cylindrical denticles in the apical region and its cylindrical conidia. Our specimens superficially fit the description of *D. hemibeltranoidea* R.F. Castañeda & W.B. Kendr. However, they differ in only producing cylindrical conidia with conico-truncate bases and despite observations made in culture and in fresh material, no fusiform or naviculate conidia as reported for *D. hemibeltranoidea* were observed. In addition, the tall conidiophores of *D. ficusicola* are thick-walled and clearly tapering towards the apex, compared with conidiophores of *D. hemibeltranoidea*, which are cylindrical. The conidiogenous cells of *D. ficusicola* are often inflated and have inconspicuous denticles rather than the conspicuous denticles reported for *D. hemibeltranoidea*. *Dactylaria queenslandica* Matsush. has conidia of a similar shape to *D. ficusicola*. However, these two species can easily be distinguished on the basis of conidiophore shape, size and pigmentation as well as conidial septation.

Discussion

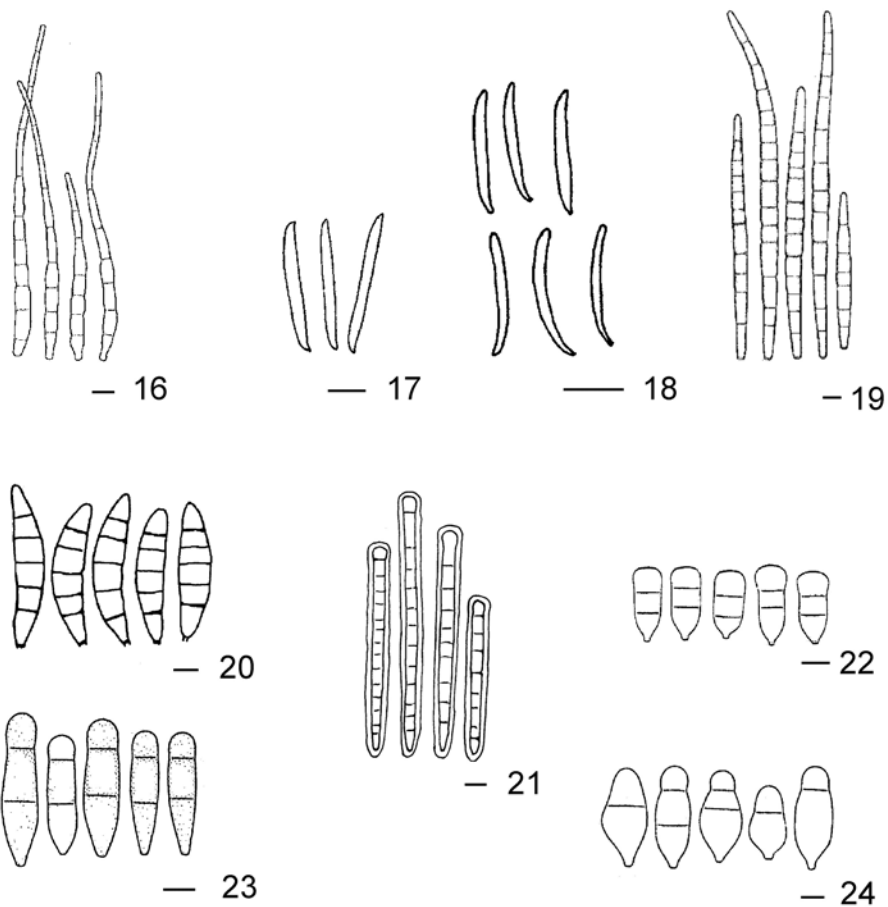
De Hoog (1985) noted that the taxonomy of the *Dactylaria* complex was still in its exploratory phase but established four sections (*Dactylaria*, *Diplorhinotrichum*, *Mirandina* and *Pleurophragmium*) within this genus to express gross morphological differences. While he refrained from forming new combinations where possible, he noted that his concept of *Pleurophragmium* differed from those of Ellis (1971, 1976) and Matsushima (1985, 1987, 1993, 1995, 1996).

Fourteen species, including two new species in this paper and three species in press (Pinnoi *et al.*, 2003), have been described in *Dactylaria* since 1997 (Table 1, Figs. 1-14, Figs 25-31). These species fit comfortably within the concept of *Dactylaria sensu lato*. One exception is *Dactylaria obscuriseptata* Goh & K.D. Hyde. This species is similar to *D. lanosa* Malla and W. Gams, which was only tentatively retained in *Dactylaria* (De Hoog, 1985). *Dactylaria obscuriseptata* appears close to *Neta* Shearer and Crane, as it has spine-like denticles and obscure septa (Shearer and Crane, 1971). Further work is required to confirm its taxonomic placement.

While no further species have been published in *Diplorhinotrichum*, five species have been described in *Mirandina* and seven taxa, including one variety, in *Pleurophragmium* since 1985 (Table 2 and Figs. 15-24). *Dactylaria*



Figs 1-15. Conidia of *Dactylaria* and *Mirandina*. **Fig. 1.** *Dactylaria asymmetrica*. **Fig. 2.** *D. belliana*. **Fig. 3.** *D. biguttulata*. **Fig. 4.** *D. cazorlii*. **Fig. 5.** *D. ficusicola*. **Fig. 6.** *D. filiformis*. **Fig. 7.** *D. flammae*. **Fig. 8.** *D. hyalotunicata*. **Fig. 9.** *D. lakebarrensis*. **Fig. 10.** *obclavata*. **Fig. 11.** *D. obscuriseptata*. **Fig. 12.** *D. palmae*. **Fig. 13.** *D. plovercovensis*. **Fig. 14.** *D. uliginicola*. **Fig. 15.** *Mirandina arnaudii*. Bars = 5 μ m.



Figs 16-21. Conidia of *Mirandina* and *Pleurophragmium*. **Fig. 16.** *M. flagelliformis*. **Fig. 17.** *M. fragilis*. **Fig. 18.** *M. speciosa*. **Fig. 19.** *M. taiwanensis*. **Fig. 20.** *Pleurophragmium angamosense*. **Fig. 21.** *P. malaysianum*. **Fig. 22.** *P. obcampanuloides*. **Fig. 23.** *P. peramazonicum*. **Fig. 24.** *P. peramazonicum* var. *inflatum*. Bars = 5 μ m.

section *Mirandina* is characterized by scolecoideous conidia, which arise from apical clusters of usually short-cylindrical denticles or occasionally flat conidiogenous loci. Conidiophores are brownish and usually erect (De Hoog, 1985). Some recent additions to *Mirandina* do not fit easily within de Hoog's concept. While all have scolecoideous conidia, some differ in their conidiophore morphology (Table 2 and Figs. 15-19). For example, *M. flagelliformis* has hyaline rather than brown conidiophores. In *M. flagelliformis* and *M.*

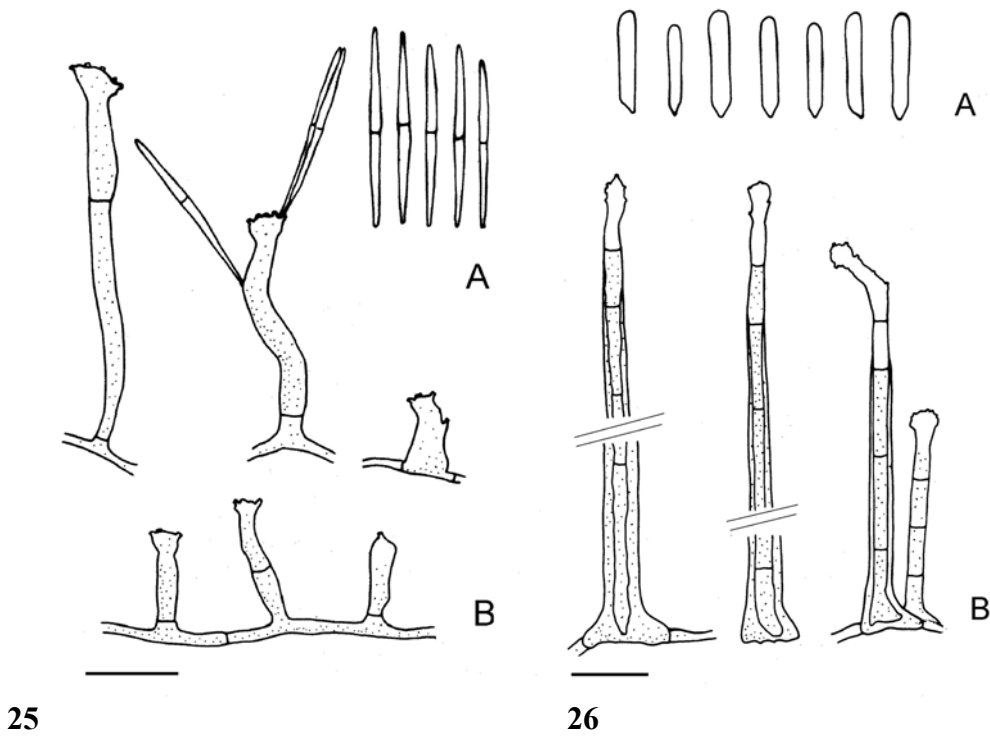
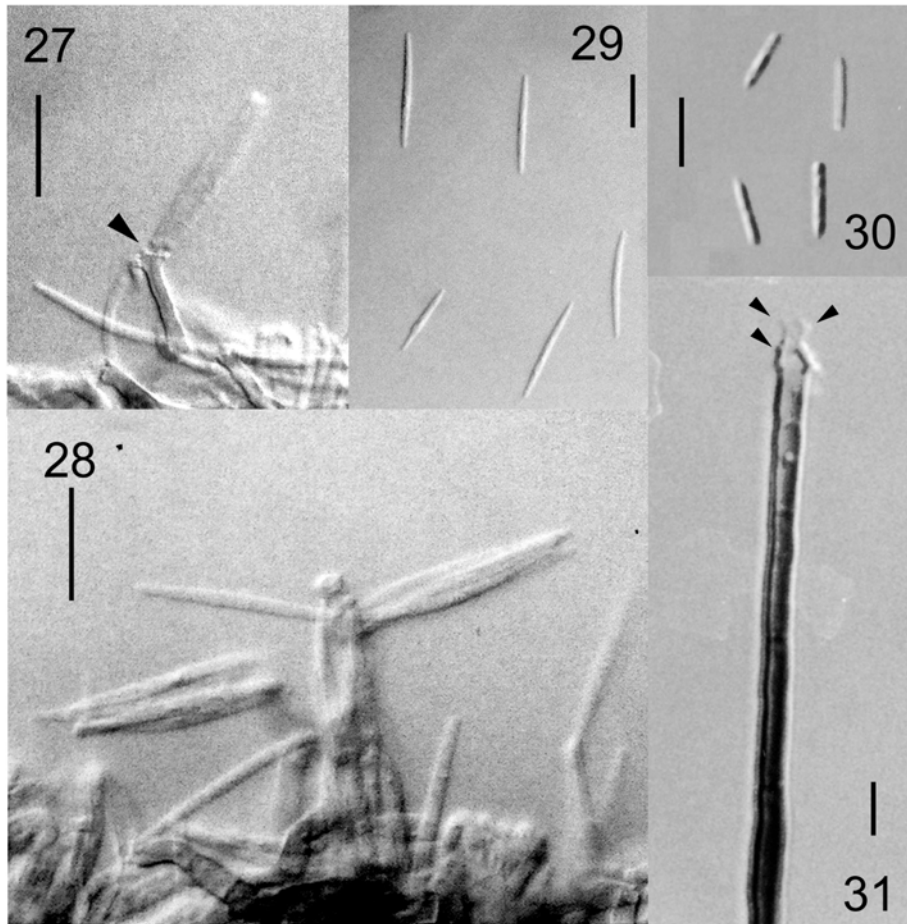


Fig. 25. *Dactylaria belliana* (from holotype). **A.** Conidia. **B.** Conidiophores. **Fig. 26.** *Dactylaria ficusicola* (from holotype). **A.** Conidia. **B.** Conidiophores.

taiwanensis Matsush. denticles cluster apically, but they are also found on intercalary cells. Three species, *M. fragilis*, *M. speciosa* and *M. taiwanensis*, appear to be lacking the short-cylindrical denticles or the flat scars, which are characteristic for *Mirandina*. While the first two species have inconspicuous, apparently tapering denticles, the latter has conical denticles (Matsushima, 1987; Castañeda Ruiz and Kendrick, 1991; Castañeda Ruiz *et al.*, 1997).

De Hoog (1985) defined the section *Pleurophragmium* as having brown, erect conidiophores with scattered, hyaline, slightly tapering denticles. Conidia are variously ellipsoidal, clavate, obclavate, cymbiform or mitrate. Since 1985, Matsushima described seven species within *Pleurophragmium* (Matsushima, 1985, 1987, 1993, 1995). Of these, *Pleurophragmium obcampanuloides* and *P. peruamazonicum*, appear to fit de Hoog's concept. Two species described by Matsushima are no longer accepted in *Pleurophragmium*. The new combination for *P. arecae* is *Dactylaria arecae* (Matsush.) R.F. Castañeda & W.B. Kendr. (Castañeda Ruiz and Kendrick, 1991). *Pleurophragmium*



Figs 27-29. *Dactylaria belliana* (from holotype). **27 & 28.** Conidiophores with attached conidia (arrow head indicates denticle). **29.** Conidia.
Figs 30-31. *Dactylaria ficusicola* (from holotype). **30.** Conidia. **31.** Conidiophore (arrow heads indicate denticles). Bars = 10 μ m.

taiwanense is a synonym of *Dactylaria parvispora* (Preuss) de Hoog & Arx (www.indexfungorum.org/Names.asp). Of the remaining species, *P. malaysianum* has hyaline rather than brown conidiophores (Table 2). Rhexolytic conidial secession is evident in *P. angamosense* (Table 2). While most *Dactylaria* species undergo schizolytic secession, a few rhexolytic species, for example *D. humicola* Bhatt & Kendrick *sensu* Knauss & Alfieri, are currently retained in this genus (De Hoog, 1985). This character state deserves further re-evaluation.

This review of recently described species in *Dactylaria sensu lato* has highlighted the need for further work, including the use of molecular tools, to clarify generic delimitation within this complex and to develop a natural classification for this group of fungi.

Acknowledgements

James Cook University, the Cooperative Research Centre for Rainforest Ecology and Management, and the Centre for Research in Fungal Diversity, Department of Ecology & Biodiversity, The University of Hong Kong are gratefully acknowledged for providing funding for this project. H. Leung is thanked for help in accessing literature. Special thanks to B. Bussaban for assistance with photography and to S. & P. Lumyong for providing laboratory space during my stay at Chiang Mai University. A. Pinnoi kindly gave us access to a manuscript of new species prior to publication. E.H.C. McKenzie is gratefully acknowledged for assistance with some identifications and for reviewing the manuscript.

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(Received 13 March 2003; accepted 14 June 2003)