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Observations on *Inocephalus virescens* comb. nov. and *Alboleptonia stylophora* from northeastern Queensland

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Abstract —*Inocephalus virescens* (≡ *Leptonia virescens*, ≡ *Entoloma virescens*) is proposed as a new combination and reported for the first time for northeastern Queensland; *Alboleptonia stylophora* represents a first record for Australia. Macromorphological and micromorphological features are provided for both species.

Key words — *Entolomataceae, Agaricales*, *Basidiomycota*, new record

Introduction

Records of the *Entolomataceae* for Australia can be found in several publications (Berkeley 1859, McAlpine 1895, Cooke 1892a, b, Massee 1898, 1899, Cleland 1927, 1931, 1933, Pegler 1965, Horak 1980, May & Wood 1997, Grgurinovic 1997, Baroni & Gates 2006, Gates & Noordeloos 2007, Noordeloos & Gates 2009, Gates et al. 2009). None of the cited collections, however, were found in northeastern Queensland nor are any listed in the only regional checklist published for Queensland (Bailey 1913).

Forster, Booth, Jensen, and Young, who made 18 collections representing *Entoloma* sensu lato during several forays to the Wet Tropics rainforest region in January–April 2001–2002 and November 2001, were the first to deposit entolomatoid collections from northeastern Queensland into an herbarium (Fechner pers. comm.). The first author (DLL), who examined the collections in 2010, found that among the seven correctly referred to the *Entolomataceae*, one represented a first record of *Alboleptonia stylophora* from Australia.

The information herein covers fungi collected during forays in northeastern Queensland from the summer wet season through the early dry (autumn) season in 2009 and 2010. A new combination, *Inocephalus virescens,* is proposed for *Entoloma virescens*, previously known only from southeastern Queensland

(Fraser Island) to Victoria (Young 2005). Complete descriptions are provided for *I. virescens* and *Alboleptonia stylophora*. This constitutes a first record of *I. virescens* for northeastern Queensland and of *A. stylophora* for Australia.

Materials & methods

Collections were made during February–April in 2009 and 2010 from various northeastern Queensland localities in rainforests within the Wet Tropics bioregion. Basidiomata collected in the field were carefully stored in plastic containers and returned to the laboratory. GPS coordinates for each collection were taken in the field using a Garmin GPSmap 60CSx. Macroscopical features were described from fresh, recently collected materials. Colors were described subjectively and coded according to Kornerup & Wanscher (1978) with color plates noted in parentheses. Color reference abbreviations indicate page number, column(s), and row(s) (e.g., 8D-F5-6 = page 8, columns D–F, rows 5–6).

Micromorphological features were examined from dried specimens with a trinocular research-grade Nikon Labophot compound microscope fitted with bright field optics following general protocols set forth in Largent (1994: 1–3) and techniques used for measuring spores of the *Entolomataceae* set forth by Baroni & Lodge (1998: 681). Measurements of cuboid or rhomboid spores were in profile view with length and width measured midway along the length and the width of each spore. Digitized microphotographs were taken using a Nikon Coolpix 990 focused through the trinocular head of the compound microscope.

All microscopic measurements were obtained using a GTCO Corporation Graphic Digitizer, Model DP5A-111A connected to an IBM compatible Chem Book Laptop computer. The software utilized was Measure Me 101 v 1.0 modified for laptop use from a BASIC program (Metrics5) developed and provided by David Malloch, University of Toronto. Factors determined using this program include: arithmetic means (x_m) of basidiospore lengths and widths ± standard deviation measured for n objects; quotient of basidiospore length by spore width (E) indicated as a range variation in n objects measured; the mean of E-values (Q) ± standard deviations. The sample size (n) = total number of microscopic structures measured (x) divided by the number of basidiomata studied (y), as shown in the formula n = x/y.

Taxonomy

Inocephalus virescens (Sacc.) Largent & Abell-Davis, **comb. nov.** PLATES 1–2

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≡ *Agaricus virescens* Berk. & M.A. Curtis, Proc. Amer. Acad. Arts 4: 116 (1860), nom. illegit. (non Schaeff. 1774).

≡ *Leptonia virescens* Sacc., Syll. fung. 5: 714 (1887).

≡ *Entoloma virescens* (Sacc.) E. Horak ex Courtec., Mycotaxon 27: 131 (1986).

BASIDIOMATA blue when damaged, becoming yellowish- or olive-green (30A-D5-6) in places and when mature or drying becoming entirely grayish-green (24-25E5); when very young pileus and stipe with whitish squamules. PILEUS 8–33 mm broad, 9–20 mm high, at first conic to conic-convex and at times acutely umbonate, expanding to parabolic to conic campanulate or

Plate 1. *Inocephalus virescens*. A: Basidiomata, 3 hours old (DLL 9972); B: Basidiomata, 2.5 days old (DLL 9972); C: Basidiomata changing to gray-green (DLL 9972); D: Off-white squamules and fibrils (DLL 9972).

campanulate and at times broadly umbonate, blue (23E5) becoming quickly yellowish-, olive- or grayish-green on exposure or handling, when very young with whitish appressed squamules that become appressed to the surface then appearing matted appressed fibrillose, dull, opaque; margin decurved at all times, entire then eroded and eventually lobed-eroded and splitting radially. Taste bitter at first, quickly becoming acrid. Odor indistinct. Context blue becoming greenish when exposed or damaged. Lamellae at first dark to dull blue (23DE5-6) becoming greenish-blue (25D4) when bruised or damaged, adnexed at all times, close to subdistant becoming subdistant to distant, moderately broad then ventricose and sigmoid (8–20 mm long × 1.5–5.0 mm high); margin lighter blue and eventually ± concolorous. Stipe 32–62 mm long, 1.5–2.0 mm broad at apex, 1.5–5.0 mm broad at base, equal to clavate, often flattened and then 2.5–4.0 × 3.0–5.0 mm broad at the apex and 3–5 × 5–6 mm broad at the base, becoming longitudinally grooved when mature, strongly pruinose at the apex, matted appressed-fibrillose elsewhere, when very young and fresh with whitish squamules that quickly become appressed to the surface, fibrils then bluish-gray (23B3) then nearly concolorous with the pileus and becoming yellowish-, olive-, or grayish-green on aging or when damaged; whitish towards the base.

Basidiospores rhomboidal in profile or side views, mostly 4-angled and rectangular, sometimes 5-angled (particularly in dorsi-ventral view), isodiametric to heterodiametric, isodiametric and 5-angled in polar view, 6.9–12.2 × 6.9–9.9 µm (x_m = 9.31 ± 1.05 × 8.84 ± 0.75 µm; E = 0.90–1.40; Q = 1.06 ± 0.11; n = 58/2). Basidia cylindro-clavate, broad, tapering to a narrow, curved foot, 42.7–53.1 × 10.8–13.5 µm (E = 3.54–4.79; Q = 4.2; n = 7/1). Cheilocystidia abundant forming a sterile layer in places, clavate with brownish contents in 3% KOH and abundant lipoid bodies, 46.1–116.0 × 8.7–13.0 µm (x_m = 74.49 ± 22.58 × 11.16 ± 1.67; E = 3.98–12.48; Q = 6.87 ± 2.62; n = 10/1). Pseudocystidia present on the lamellar edge and faces, often cylindric, at times cylindro-clavate, mostly contorted and strangulated, staining golden brown in 3% KOH, 26.7–72.7 × 2.0–6.0 µm (x_m = 47.5 × 4.0 µm; E = 6.33–28.21; Q = 13.25; n = 9/1). Hyphae of lamellar trama with abundant oleiferous hyphae that stain reddish-brown in 3% KOH, many with light brown colored contents, some strongly pigmented, with two distinct strands of the dense and crowded oleiferous hyphae in the subhymenium, 195–460 × 9.1–21.5 µm. Pileipellis an entangled layer of hyphae. Pileocystidia long and cylindro-clavate, 77.9–243.4 × 10.1–13.6 µm. Hyphae of the pileal trama with abundant oleiferous hyphae. Stipitipellis similar to the pileipellis except in places with clusters of hymenial elements. Caulocystidia similar in shape to the pileocystidia, 50.0–158.1 × 9.2–15.1 µm. Oleiferous hyphae abundant in the pileal, lamellar, and stipe tramas. Lipoid bodies abundant in the tramal hyphae and obscuring microscopic features. Pigmentation cytoplasmic and yellowish-green in the cheilocystidia, pileipellis, stipitipellis, and some hyphae of the lamellar trama, and exuding brownish color in spot plate depression filled with 3% KOH; dark golden brown in the pseudocystidia. Clamp connections abundant at base of basidia, basidioles, cystidia and on the hyphae of the pileipellis and stipitipellis.

Habit, habitat, and distribution solitary amongst leaf litter in a simple microphyll vine-fern forest beneath *Balanops australiana* F. Muell. and *Agathis atropurpurea* B. Hyland (DL Largent 9772); or scattered on *Calamus* L. trunk with *Oraniopsis* J. Dransf. & al. abundant in understory (Costion 2234); or scattered to gregarious throughout CSIRO permanent plot EP30 (a very tall to extremely tall closed forest that is a transitional simple notophyll to microphyll vine-fern forest (SN/MiVFF), with a subcanopy dominated by *Ceratopetalum succirubrum* C.T. White, *Brombya platynema* F. Muell. and *Cyathea rebeccae*

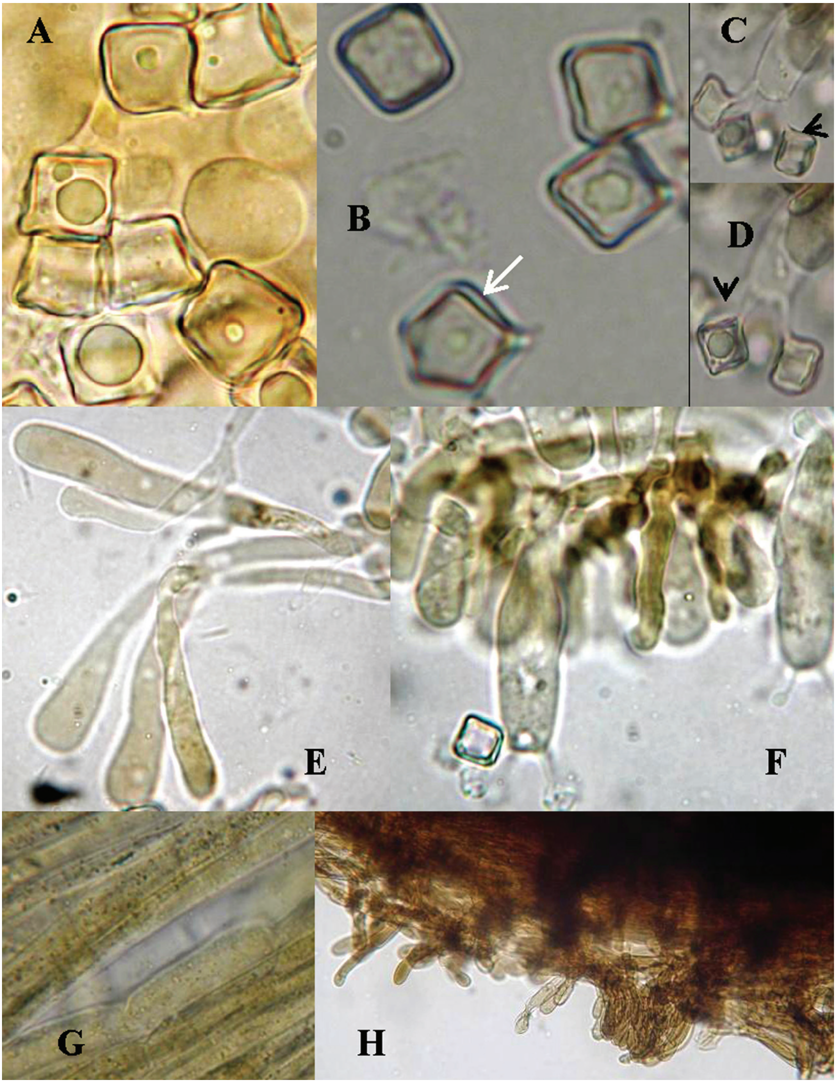

Plate 2. *Inocephalus virescens*. A: Basidiospores (DLL 9772); B: Basidiospores 4-angled, 5-angled dorsi-ventral view (white arrow) (DLL 9772); C: Basidiospore in profile view (DLL 9771); D: Basidiospore in dorsiventral view (DLL 9771); E: Pigmented cheilocystidia (DLL 9772); F: Basidia and pseudocystidia originating from oleiferous hyphae (DLL 9772); G: Tramal hyphae with lipoid bodies (DLL 9772); H: Stipitipellis showing caulocystidia as terminal cells (DLL 9772).

(F. Muell.) Domin conspicuous in the understory (DL Largent 9791). Species in the *Inocephalus virescens* complex occur in the neotropics, the paleotropics, in New Zealand, and along the eastern Australian coast from northeastern Queensland to Victoria.

Collections examined: **AUSTRALIA**. **New South Wales**, Hunter Region, Myall Lakes National Park, Seal Rocks Area near Seal Rocks road, 2 May 2010, DL Largent 9972 (DAR) (32°25′05.3″S; 152°28′27.5″E; 50.9 m); **Queensland**, Cook Region, Brooklyn Wildlife Sanctuary, Mt Lewis, 5 March 2010, DL Largent 9771 (BRI) (16°36′05.16″S; 145°16′21″E; 1019.9 m); Mt Windsor National Park, 5 March 2010, DL Largent 9772 (BRI, CNS) (16°16′00″S; 145°04′00″E, 1073 m); Daintree National Park, Cape Tribulation Section, Mt Sorrow track, 12 December 2009, Costion 2234 (BRI) (16°04′36.6″S; 145°25′55.2″E; 781.8 m).

Distinctive characters *Inocephalus virescens* from northeastern Queensland is distinctive in its 1) blue, moderate-sized basidiomes that become yellowish- to grayish-green with age and on handling; 2) its rhomboidal, mostly 4-angled, sometimes 5-angled basidiospores that average <10 µm in length; 3) its clavate cheilocystidia with yellowish-green cytoplasmic contents that are distinct from the pseudocystidia; 4) its pileipellis and stipitipellis composed of entangled hyphae with cylindro-clavate pileocystidia and caulocystidia; 5) its whitish to off-white squamules on the pileus in young material; and 6) its bitter, then latently acrid, taste.

Comments The cuboid spores, long basidia, strangulated and contorted pseudocystidia that originate from abundant oleiferous hyphae in the subhymenium, conic-campanulate pileus with appressed-fibrils, and abundant clamp connections (at least in the pileipellis) diagnose the collections from northeastern Queensland as an *Inocephalus* species. Based on basidiomata stature and colors, the 4-angled spores, the conic to campanulate blue pileus that becomes grayish-green, and the pseudocystidia, our northeastern Queensland and New South Wales collections would be identified as *Rhodophyllus holocyaneus* Romagn. using the keys in Romagnesi (1941) and Romagnesi & Gilles (1979) or as "*Entoloma virescens*" using the keys in Horak (1976, 1980). Our collections, for the most part, also match descriptions of "*Entoloma virescens*" sensu Noordeloos & Hausknecht (2007) and *Entoloma aeruginosum* Hiroe (≡ *Rhodophyllus aeruginosus* Hiroe) Hongo sensu Courtecuisse (1986). Our collections also nearly match a description of *I. virescens* from the Lesser Antilles (Baroni unpublished).

Rhodophyllus holocyaneus

Rhodophyllus holocyaneus from Madagascar and Gabon is characterized by cylindro-clavate pileocystidia, clavate cheilocystidia, abundant oleiferous hyphae that form pseudocystidia, abundant granules, and clamp connections (Romagnesi & Gilles 1979). All those features are found in our collections. *Rhodophyllus holocyaneus* can be distinguished from the Queensland collections by its mild taste, strictly cuboid (4-angled) basidiospores (9–11 µm in Romagnesi 1941, 10–11.5 µm in Romagnesi & Gilles 1979) averaging >10 µm, and only blue-green colors.

Romagnesi (1941) described two species that differed in color from *R. holocyaneus* — *R. psittacinus* Romagn. with parrot-green colors that change to yellow and *R. cubisporus* Pat. with uniformly indigo-blue colors without green tinges. Romagnesi & Gilles (1979: 407), who found collections with intermediate colors in Gabon, suggested that *Rhodophyllus holocyaneus*, *R. psittacinus,* and *R. cubisporus* might be polychromatic forms of the same species, recapitulating Romagnesi's original hypothesis in 1941.

"*Entoloma virescens*" sensu Horak and sensu Noordeloos & Hausknecht

Agaricus virescens Berk. & M.A. Curtis from the Bonin Islands is the type-bearing name. That species is characterized by blue colors that become green, a centrally depressed pileus, and broad distant adnexed lamellae. After examining the holotype of *Agaricus virescens*, both Romagnesi (1941) and Horak (1976) determined the pileus to be conical rather than depressed and the basidiome nolaneoid rather than leptonioid in stature. The holotype is in very poor shape and only the basidiospores could be studied. Courtecuisse (1986) found the cuboid spores to measure 8.8–11 µm.

With respect to "*Entoloma virescens*" sensu Horak (1976, 1980), the basidiospores average <10 µm [(7–)8–10 µm] and the pseudocystidia resemble those from our Australian material, but Horak's taxon differs in mild taste and lack of clavate cheilocystidia. Horak also reported both the presence and the absence of clamp connections for "*Entoloma virescens*" (Horak 1976: 202).

"*Entoloma virescens*" sensu Noordeloos & Hausknecht (2007) from Seychelles has cylindro-clavate cheilocystidia, pseudocystidia and similar macroscopic features as our collections. However, the Noordeloos & Hausknecht taxon has only 4-angled basidiospores (10–11.5 µm, average 11.3 µm) and a mild taste contrasting with our material with 4-5-angled basidiospores and a bitter taste that quickly becomes acrid.

Entoloma aeruginosum

Entoloma aeruginosum is macroscopically and microscopically similar to "*Entoloma virescens*" sensu Noordeloos & Hausknecht (2007), but its holotype no longer exists. Courtecuisse (1986), who examined two collections from Japan with basidiospores averaging >10 µm — one labeled *Rhodophyllus aeruginosus* with basidiospores measuring 9.5–11.5(–12.0) µm and the other labeled *Entoloma aeruginosum* with basidiospores measuring 10–12(–12.5) µm — concluded that the basidiospores were more complex in their morphology than those in the *Agaricus virescens* holotype. *Entoloma aeruginosum* differs from *Inocephalus virescens* by 4-angled basidiospores that measure 9.5–12.5 µm (average >10 µm) and a mild taste.

Inocephalus virescens sensu Baroni

The bitter and latently acrid taste noted for the Lesser Antilles material of *I. virescens* by Baroni (unpub. data) is a unique feature given that all other descriptions of representatives of the *I. virescens* concept describe a mild taste. Baroni plans to propose a new variety from the Caribbean based on the acrid taste and production of a distinctive colored latex (Baroni pers. comm.). Although our northeastern Queensland material had an acrid taste, colored latex could not be verified, as all material was too mature when collected.

The 4- and sometimes 5-angled basidiospores and clavate cheilocystidia that are distinct from the pseudocystidia differentiate our material of *Inocephalus virescens* from the Caribbean material, in which all basidiospores appear cuboid in all views and the broadly clavate cheilocystidia appear to represent pseudocystidia.

In her poster on *Inocephalus* species from Brazil presented to the 2010 Australian Botanical Society meetings, Fernanda Karstedt emphasized the 4–5-angled basidiospores and uniform discoloration as characters to separate *I. virescens* from other blue entolomatoid fungi that stain grayish-green. Both features are either lacking or are not emphasized in any other publication dealing with the *I. virescens* species complex.

Taxa related to _Inocephalus virescens_

Inocephalus virescens is closely related to *Entoloma hochstetteri* (Reichardt) Stevenson from New Zealand and *E. altissimum* (Massee) E. Horak sensu Horak (1976, 1980) from Singapore and Borneo. In both 1973 and 2008, Horak recognized *E. hochstetteri* as a distinct species. *Entoloma hochstetteri* sensu Horak (1973, 2008) can be easily separated from *I. virescens* by its larger basidiospores (11–15 µm in length, average >11.5 µm), constricted fusoid cheilocystidia, lack of pleurocystidia and pseudocystidia, non-distinctive taste, dull blue basidiomata that change only to greenish-blue and then ochraceous at the pileus apex, and stipe context that becomes bluish-green especially at the base (Horak 2008; see also color illustrations by Horak at http//virtualmycota.landcareresearch.co.nz/ webforms/vM_Species.aspx?pk=3353). *Entoloma altissimum* sensu Horak can be distinguished from *I. virescens* by its much longer stipe (≤150 mm long), lack of taste, and — most significantly — lack of pseudocystidia and oleiferous hyphae (Horak 1976, 1980).

Conclusion

Clarification of taxa with blue-colored basidiomata with cuboid basidiospores that become green on handling or maturity is hindered either by the absence of holotype collections or by holotype material in poor condition. Elucidation of taxa is also complicated when evanescent features present in young basidiomata but not in mature specimens are inadvertently overlooked, such as the colorless squamules on the pileus margin or pileus surface. Equally unhelpful are observations about the absence and presence of clamp connections within a single description without noting which collections examined possessed or lacked clamp connections.

We agree with Noordeloos & Hausknecht (2007) that thorough documentation of material of *Inocephalus virescens* collected throughout its entire geographical range is mandatory in order to determine morphological and anatomical variation of this complicated species. Therefore, we consider, as did Noordeloos & Hausknecht (2007) for their Mauritius material, that the collections from northeastern Queensland and New South Wales fit the concept of *I. virescens* sensu lato. We also conclude *I. virescens* sensu lato represents a species complex for which molecular data would help determine species limits and phytogeographical distributions in this group.

Alboleptonia stylophora (Berk. & Broome) Pegler, Kew Bull. 32: 199 (1977).

Plates 3–4

≡ *Agaricus stylophorus* Berk. & Broome, J. Linn. Soc., Bot. 11: 537 (1871).
≡ *Entoloma stylophorum* (Berk. & Broome) Sacc., Syll. Fung. 5: 687 (1887).
≡ *Rhodophyllus stylophorus* (Berk. & Broome) Romagn., Prodr. Fl. Mycol. Madag. 2: 132 (1941).
≡ *Leptonia stylophora* (Berk. & Broome) Dennis, Kew Bull., Addit. Ser. 3: 78 (1970).

Pileus 6–32 mm broad, 2–15 mm high excluding umbo, umbo 1.5–3.0 mm high, typically cuspidate at times acutely umbonate, at first conic, then convex and finally broadly convex to plane and undulate wavy, entirely minutely appressed-fibrillose, white then pale yellowish-white or orange-white (4-5A2–3), dull, faintly translucent-striate to the umbo, with age becomes plicate-striate, hygrophanous when very mature and then grayish-orange (5B3); margin minutely fibrillose fringed, incurved becoming decurved then plane finally uplifted, eventually eroded and splitting radially; trama white, unchanged, ≤ 1.0 mm thick. Taste indistinct at first, then latently and suggestively farinaceous. Odor indistinct to somewhat pungent. Lamellae adnexed to uncinate, rarely with a slight decurrent tooth, close to subdistant, rarely narrow more commonly moderately broad and sigmoid (7–13 mm long × 2.75–5.0 mm high), off-white (4-5A2-3); margin smooth then serrate to eroded, concolorous. lamellulae 3 (2 short, 1 medium to medium long) between 2 lamellae. Stipe 27–52 mm long, 0.75–3.0 mm wide at apex, 0.75–4.5 mm broad at base, equal but more commonly tapered, white and ± translucent, becoming yellowish-white (4-5A2-3), at times pruinose at the apex, glabrous but hygrophanous streaked with age, hollow, fragile and breaks easily; basal tomentum scarce to absent.

Basidiospores nodulose-angular with 5–7 angles, isodiametric to heterodiametric in side and profile views, isodiametric and 5-angled in polar view, 8.9–13.9 × 6.8–11.4 µm (x_m = 11.8 ± 0.95 × 9.0 ± 0.84 µm; E = 1.10–1.62;

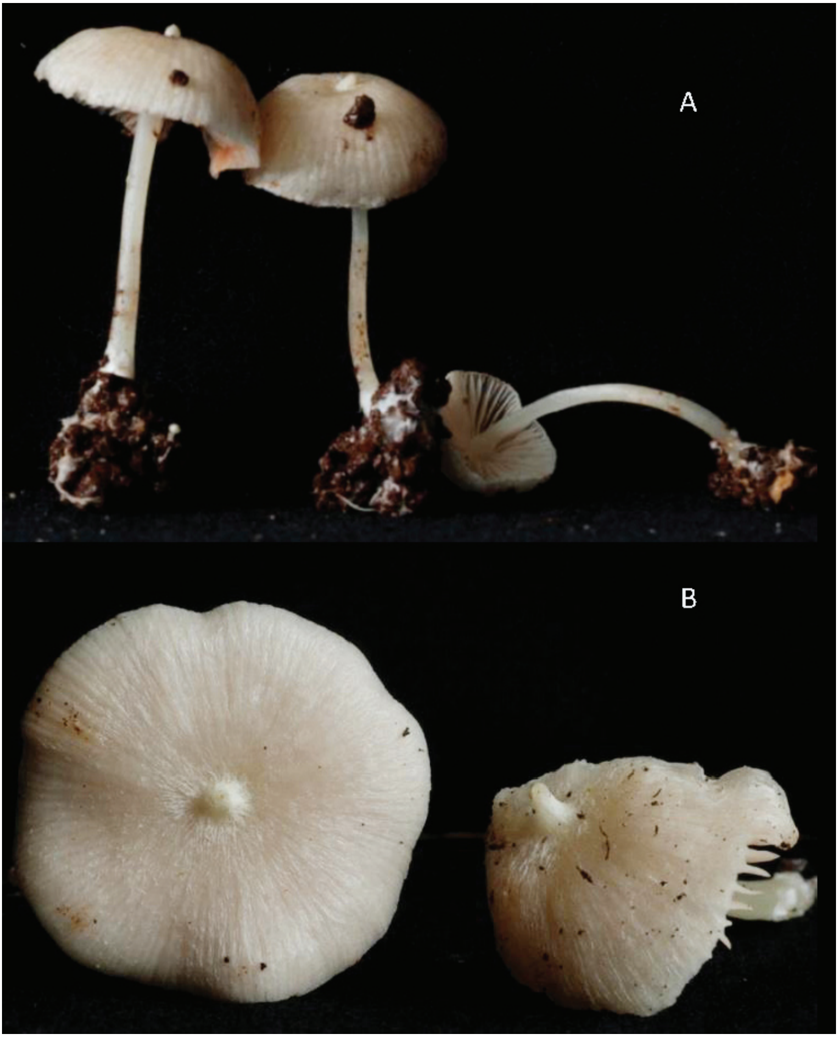

Plate 3. *Alboleptonia stylophora*.
A: Basidiomata stature (DLL 9826); B: Pileal surface (DLL 9764).

Q = 1.32 ± 0.11 (heterodiametric); n = 135/6). Basidia cylindro-clavate, hardly tapered, 1-, 2-, or 4-sterigmate, 24.2–36.8 × 7.8–11.3 µm (x_m = 29.3 ± 3.07 × 9.7 ± 0.88 µm; Q = 2.14–4.20; E = 3.03 ± 0.39; n = 27/5). Cheilocystidia typically absent in many sections; at times abundant, in clusters, and forming a sterile edge in place in many gill sections, clavate to cylindro-clavate and thin-walled in two collections (DL Largent 9826, DL Largent 9831), 19.9–53.3 ×

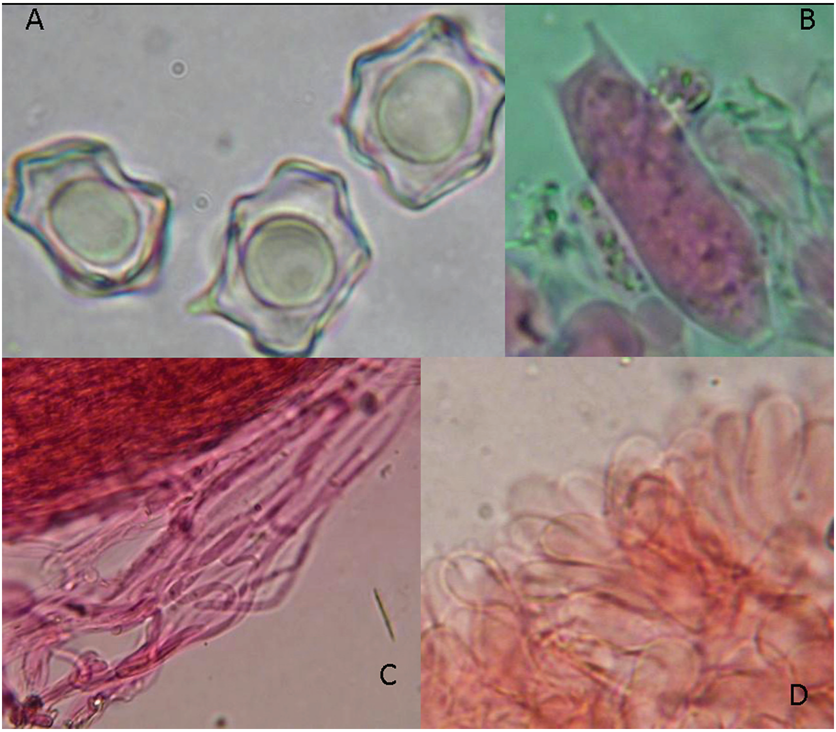

Plate 4. *Alboleptonia stylophora*.
A: Basidiospores (DLL 9751); B: 2-sterigmate basidium (DLL 9822);
C: Pileipellis (PIF27869); D: Cheilocystidia (DLL 9831).

4.5–9.9 µm. Pleurocystidia absent. Hyphae of lamellar trama relatively short and easily separating from one another when squashed, 35.2–166.2 × 3.9–22.0 µm. Pileipellis an entangled layer in places, 24–120 µm deep, often collapsed and thus appearing to be a cutis. Pileocystidia cylindric to cylindro-clavate, 60–76 × 6–10 µm. Hyphae of the pileus trama relatively short and narrow, rarely broad, 56.3–155.9 × 5.4–10.8 µm. Stipitipellis a cutis, hymenial elements absent. Caulocystidia absent. Oleiferous hyphae scattered in the pileal trama, rare in the stipe trama. Lipoid droplets absent. Pigmentation none. Clamp connections absent in all tissues.

Habit, habitat and distribution solitary, scattered, gregarious or caespitose in soil amongst grasses or on rhizomes of *Cyathea cooperi* (F. Muell) Domin; or in amongst leaf litter under *Toona australis* (Kuntze) Harms, *Ganophyllum falcatum* Blume, *Terminalia sericocarpa* F. Muell., *Argyrodendron peralatum* (Bailey) Edlin ex J.H. Boas, or *Myristica insipida* R. Br.; or in complex mesophyll vine-forest throughout northeastern Queensland; also in Singapore, Papua New Guinea, Solomon Islands (Horak 1980), Madagascar (Romagnesi 1941), Mauritius (Noordeloos & Hausknecht 2007), India (Manimohan et al. 1995), Sri Lanka (Petch 1917, Pegler 1977), the Hawaiian Islands (Horak & Desjardin 1993), Puerto Rico (Baroni & Lodge 1998), Martinique (Pegler 1983), Trinidad (Dennis 1953, Pegler 1983, Baroni & Lodge 1998) and Costa Rica (Baroni & Lodge 1998). This is the first report of this species for Australia.

Collections examined: **AUSTRALIA. Queensland**, Cook Region. In a garden of a home in Redlynch, Cairns, 17 April 2009, Abell 377 (CNS) (16°57′27″S; 145°41′31″E; 87 m); Danbulla National Park, Kauri Creek Track, 28 February 2010, DL Largent 9751 (BRI, CNS) (17°07′50.4″S; 145°35′55.9″E; 730.6 m); 2 March 2010, DL Largent 9764 (BRI, CNS) (17°07′50.6″S; 145°35′55.8″E; 706.8 m); 24 March 2010, DL Largent 9822 (BRI, CNS) (17°07′50.4″S; 145°35′55.7″E; 715.7 m); Danbulla National Park, Lake Euramoo Track, 21 March 2010, DL Largent 9805 (BRI, CNS), 24 March 2010, DL Largent 9819 (BRI, CNS) (17°09′43.4″S; 145°37′40.7″E; 757.7 m); 24 March 2010, DL Largent 9826 (BRI, CNS) (17°09′42.0″S; 145°37′45.0″E; 753.8 m); 25 March 2010, DL Largent 9831 (BRI, CNS) (17°09′42.1″S; 145°37′40.3″E; 733.0 m); Saltwater Creek, 4km NW of Mossman National Park 29 November 2001, PIF27869 (BRI) (16°25′58″S; 145°20′04″E; 69.8 m); Smithfield Conservation Park, 5 June 2009, PN050609 (BRI, CNS) (16°48′48.6″S; 145°40′51.9″E; 503.2 m).

Comments *Alboleptonia stylophora* is uniquely identifiable by the cuspidate to acute umbo on a conic-campanulate to broadly convex, white, minutely appressed-fibrillose pileus that quickly becomes pale yellow, the concolorous stipe, the complex, nodulose angular large basidiospores, and the entangled layer of hyphae that form the pileipellis. The absence of cheilocystidia and the presence of clamp connections have been reported on hyphae in the context in collections from Sri Lanka (Pegler 1977) and Lesser Antilles (Pegler 1983, 1986). Although Dennis (1970) and Romagnesi (1941) did not report on these features for their *A. stylophora* collections from Trinidad and Madagascar, respectively, the presence of cheilocystidia and lack of clamp connections were reported by all other investigators. Cheilocystidia were absent in almost all of the collections from northeastern Australia with the exception of DL Largent 9826 and DL Largent 9831 (collected from the same area at Lake Euramoo, Danbulla National Park) and Abell 377 (collected on fern rhizomes in a garden). The presence or absence of thin-walled cheilocystidia in different collections of the same species is perplexing and has two explanations. Either these cheilocystidia often collapse and are difficult to demonstrate (see Baroni & Lodge 1998: 692) or they are present on only a part of the edges of the lamellae (more often the lamellulae) and thus easily overlooked, as was the case in Abell 377.

Based on the appressed-fibrillose off-white pileus, the entangled pileipellis layer, and the heterodiametric basidiospores, *A. stylophora* is considered a good species of *Alboleptonia.* Furthermore, all features found in *A. stylophora* are also those circumscribed for the genus by Largent & Benedict (1970) and Largent (1994).

However, nodulose angled basidiospores, lack of clamp connections, and small basidia are not typically found in *Alboleptonia* and are not present in the type species, *A. sericella* (Fr.) Largent & R. G. Benedict. Here also, molecular sequence analyses should help determine the taxonomic significance of these and other features.

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