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# VERSIOMYCES CAHUCHUCOSUS GEN. ET SP. NOV. FROM QUEENSLAND, AUSTRALIA

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ABSTRACT. *Versiomyces cahuchucosus* gen. et sp. nov. (Ascomycotina, Sphaeriales, Xylariaceae) is described, illustrated and discussed.

In March 1974 a single bi-lobed stroma of a fungus resembling a species of *Daldinia* Ces. & De Not. was collected from an old, long fallen, eucalypt log at the edge of the car park near Jolly's Lookout in the Boobana National Park, Brisbane, Queensland, Australia. The log was decorticated, covered in algae, partly overgrown by weedy vegetation and the specimen was accompanied by *Xerulina* (=*Chrysopepla*) *asprata* (Berk.) Pegler. During a second visit to the site by Watling in 1982 the log was located but there was no longer any evidence of the fungus. However, the original collection is substantial, very distinctive and, although superficially similar to *Daldinia*, justifies separate generic status.

**Versiomyces** Whalley & Watling, **gen. nov.**

A *Daldinia* stromatibus cahuchucosis non zonatis, carneque cum striis flabelliformibus differt; ostiola umbilicata margine paulo elevato.

**Versiomyces cahuchucosus** Whalley & Watling, **sp. nov.** Fig. 1.

*Stroma* cerebriforme, convexo-pulvinatum, 25–35mm longum, 15mm latum (20mm crassum), primo ex rubro nigrum, deinde atrum, obscure nitens, cahuchucosum, in sicco indurescens, corneumque, pagina convolutissima. *Ostiola* umbilicata, margine paulo elevato plerumque indistincto. *Perithecia* monosticha, subglobosa vel ellipsoideo-elongata, 0·5–0·7mm longa. *Ascosporae* ellipsoideae extremitatibus obtusis, atrofuscae, laeves, rima germinativa distincta, per totam longitudinem sporae extensa, 13–17·8 × 7·5–10·3μm.

Etym.: *cahuchucosus*, *–a*, *um*; rubbery, i.e. with the texture and elastic properties of India rubber or caoutchouc as that formed from latex of *Hevea brasiliensis*; in reference to the stroma. The Latin neologism has been coined from the Carib word *cahuchu* from which the European 'caoutchouc' is derived.

*Stroma* large, cerebriform with short tapering base, 25–35 × 15mm, 20mm high, dark reddish brown becoming black and weakly shiny, surface highly convoluted; *ostioles* umbilicate with a slightly raised rim, generally indistinct, interior very hard but not carbonaceous; *flesh* mainly black but two buff-coloured peripheral zones which are separated by a dark band lie immediately beneath the perithecial layer, rubbery, not distinctly fibrous, but clearly mottled by the presence of greyish-white striations radiating out in a fan-like fashion from the base to the periphery. *Perithecia* monostichus, subglobose to elongate ellipsoid, vertically arranged in stroma through compression, 0·5–0·7mm and 0·8–

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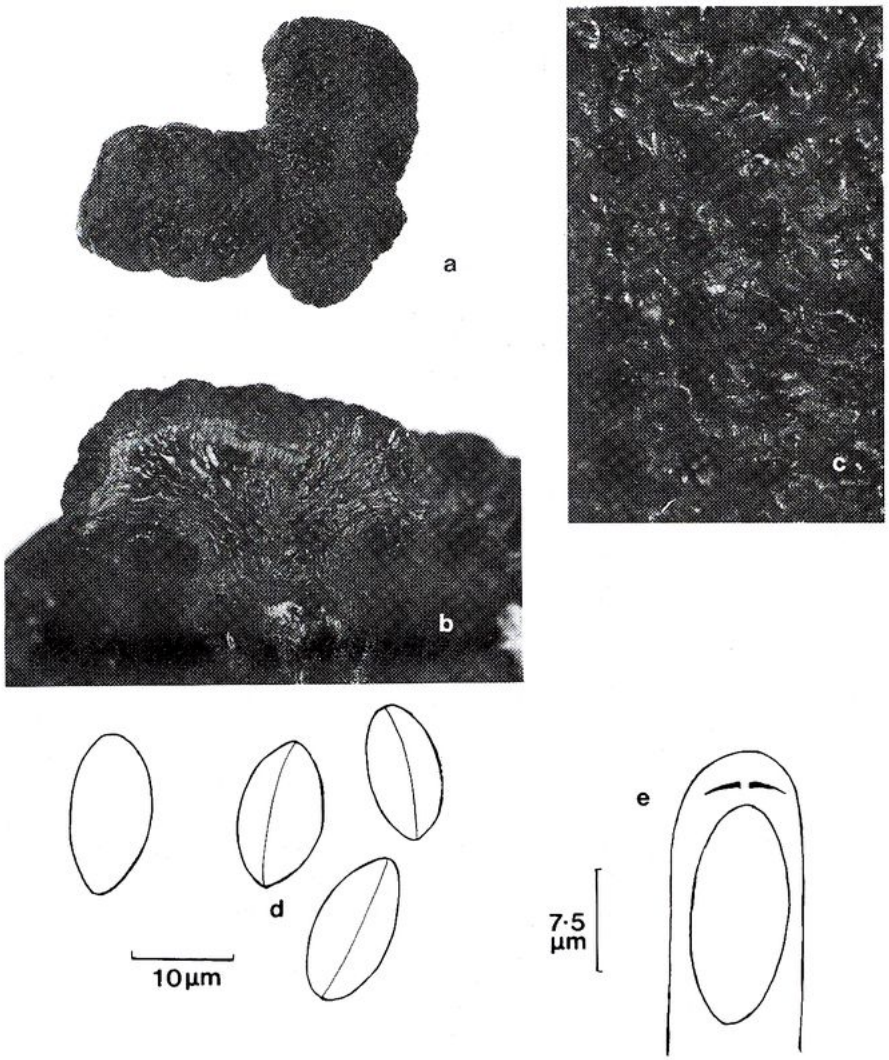


FIG. 1. *Versiomyces cahuchucosus*. a, stroma ×1; b, section of stroma showing radiating striations ×4; c, stromal surface ×10; d, ascospores; e, ascus tip with apical apparatus.

1·0mm long. *Asci*, none observed intact but very probably cylindric, and remnants revealed an apical apparatus which turns blue in Melzer's reagent and appears as a flattened disc 3–4·5µm wide. *Ascospores* dark brown, smooth-walled, ellipsoid to broadly ellipsoid, with clear germination slit running the whole length of the spore, 13–17·8×7·5–10·3µm.

Type: Australia, Queensland, Brisbane, on decaying fallen *Eucalyptus* log, Boobana National Park, 28 iii 1974, *Wat.* 10838, (holo. E).

The dark brown, unicellular ascospores with a prominent germination slit, together with an iodine positive apical apparatus, indicate the Xylariaceous nature of *Versiomyces*. The size and general appearance of the stroma is reminiscent of *Daldinia* but the two differ in a number of aspects. *Versiomyces cahuchucosus* lacks the regular concentric zonation

of the entostroma which is characteristic for *Daldinia*; it also possesses a highly convoluted surface and the entostroma is remarkably hard with characteristic striations radiating out from the base. *Daldinia* was erected for species usually of considerable size and with concentric zonation of the stroma which was more pronounced in *D. concentrica* than in species of *Hypoxylon* with which the species had been formerly associated (Child, 1932). The close association between *Daldinia* and *Hypoxylon* has never been in dispute and their separation was justified only on the concentric zonation of the stroma in the former. Although faint concentric zones can be seen in some of the globose species of *Hypoxylon*, e.g. *H. howeianum* Peck (Miller, 1961), most authors segregate *Daldinia* on its zonate nature. For this reason Child (1932) excluded *Daldinia angolensis* (Welw. & Curr.) Sacc. and suggested 'hence the species should probably be placed in *Hypoxylon*'. Eventually *D. angolense* was recognized as a member of the newly erected genus *Rhopalostroma* D. Hawksw. (Hawksworth, 1977).

The convoluted surface is a feature deserving further comment since wrinkling of the surface of stromata also occurs in *Daldinia*. Child (1932) stated that this 'is at best an uncertain character and of little value if considered on its own merits. This is especially true in connection with such a species as *D. vernicosa*, of which the ascocarps when mature are filled with an abundance of a viscous liquid that disappears on drying and allows the inner tissue to collapse or to become loculate, with the accompanying wrinkling of the outer surface'. In our experience the drying of tissue to produce locules in the entostroma is a regular feature in *D. vernicosa* (Schw.) Ces. & De Not. and is frequently accompanied by a wrinkling of the surface (Whalley & Watling, 1980). We suspect that in any species with a strongly wrinkled or convoluted surface gelatinous pockets exist in the entostroma which then form locules, or else the tissue collapses when the stroma dries out. In *Versiomyces* the deeply convoluted surface was viscous and the stroma rubbery when fresh but there was no indication of tissue collapse or formation of 'pockets' in the entostroma on drying as might be expected—in this respect it differs from those species of *Daldinia* which normally possess a wrinkled surface. Because of this feature and the lack of zonation, *Daldinia* is an inappropriate genus for this fungus. In searching for a suitable genus other Xylariaceous fungi similar to *Daldinia* were considered. *Engleromyces goetzii* Henn. is similar in external appearance but is characterized by white flesh and the presence of a massive iodine positive apical apparatus in its asci (Dennis, 1961). *Versiomyces* is totally unlike any known species of *Hypoxylon* and with its curiously radiating striations appears unique.

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