

***Ascobolus calesco* A. Bell & D.P. Mahoney, sp. nov.****MycoBank:** MB504545.**Etymology:** *caleso* (L.) = “to grow in the warm”, referring to the fact that the fungus occurs predominantly in the northern warmer states of Australia.**Latin diagnosis:** Apothecia aggregata, sessilia, semiimmersa, doliiformia, ca. 0.5–0.75 mm diam, albida vel ochracea, paraphyses hyaline, septatae. Asci clavati, operculati ca. 180 × 50–60 µm, 8-spori. Ascospores biseriatae, brachyellipsoideus vel semiglobosus, 36–47 × 30–36 µm. Epispodium carmineoroseum, glabrotunicatus, aliquando fissuratum. Fungus fimicola.**Description on dung:** Apothecia scattered or crowded but not confluent, sessile, semiimmersed, doliiform, dull whitish to pale ochre yellow (5B4<sup>1</sup>), about 0.5–0.75 mm diam. Apothecial walls of *textura angularis* (Fig. 1A). Paraphyses hyaline, septate. Asci broadly clavate at maturity, about 180 × 50–60 µm, operculate, 8-spored (Fig. 1B). Ascospores biseriate, short ellipsoidal to semiglobose, rose in colour at maturity (12A56), 36–47 × 30–36 µm, epispore smooth with the occasional fissure. When fresh, each ascospore is surrounded by a clear gelatinous envelope (Fig. 1C), finally becoming brown with age (Fig. 1D).**Typus:** Australia, Northern Territories, S. of Darwin, Bees Creek (latitude: -12° 35', longitude 131° 02'), on dung of agile wallaby, November 1998 (dung incubated 14 March 2006), collected by S. Lambert, PDD 90042, **holotypus**.**Notes:** During research into Australian coprophilous ascomycetes<sup>2</sup>, we recorded a species of *Ascobolus* with globose to semiglobose ascospores which we identified as *Ascobolus quezelii* Faurel & Schotter<sup>3</sup>, as described by van Brummelen<sup>4</sup>. Van Brummelen mentioned that the Faurel & Schotter species had, “small ascospores (42–48 × 20–50 µm),” but that it had not been validly published because the description, “lacked indication of type.” Because the Australian material of the *Ascobolus* species in question had ascospores within the size range of 38–44 × 30–34 µm and was within a reasonable range for the Faurel & Schotter species, we assumed that our Australian fungus was probably their *Ascobolus quezelii*. We did not then have access to the original Faurel & Schotter paper<sup>3</sup>, nor did our Australian collections bear great quantities of the fungus that might serve as good type material. Early last year, we obtained a plentiful sample of this fungus from some incubated wallaby dung from which we could measure more ascospores and slightly extend the size range, and dry the specimen for a herbarium sample.Since then, we contacted the herbarium at Paris where Faurel's herbarium resides and was informed that no material of *Ascobolus quezelii* is housed there. We have checked other institutions to no avail. Having now obtained a copy of the Faurel and Schotter paper<sup>3</sup>, we find that their illustrations do not match the Australian material, but resemble a smaller version of *Ascobolus immersus* Pers.: Fr. as described and illustrated by van Brummelen<sup>4</sup>. Because herbarium material does not exist, *A. quezelii* Faurel & Schotter must be considered a *nomen dubium* and our Australian species of *Ascobolus* has been renamed above.*Ascobolus calesco* is not infrequently collected on various kinds of herbivore dung in the northern parts of Australia. To date we have recorded it on 16 dung samples collected from the Northern Territories, Western Australia and South Australia. Dung types include wallaroo, wallaby, rock wallaby, agile wallaby and brush tail possum. Superficially, *A. calesco* resembles *Ascobolus immersus* Pers.: Fr., but easily distinguished by having ascospores that are short, and ellipsoidal to subglobose. Ascospores of *A. immersus* are longer, ellipsoidal or sometimes slightly pyriform. *Ascobolus immersus* is also commonly found on herbivore dung from Australia.**Colour illustrations:** Australian landscape near Cairns, Queensland (P.W. Crous). *Painting* (A. Bell): A. Apothecium. B. Mature ascus and paraphyses. C. Mature ascospores. D. Old ascospore. E. Scatter diagram illustrating ascospore size range. Further illustrations of this species can be located in Bell<sup>2</sup> under the name of *Ascobolus quezelii* Faurel & Schotter.**References:** <sup>1</sup>Kornerup A, Wanscher JH (1989). *Methuen Handbook of Colour*, 3<sup>rd</sup> ed., Methuen, London. <sup>2</sup>Bell A (2005). An illustrated guide to the coprophilous Ascomycetes of Australia. *CBS Biodiversity Series* **3**: 1–172. <sup>3</sup>Faurel L, Schotter G (1965). Notes Mycologiques V. Champignons coprophiles du Tibesti. *Revue de Mycology* **30** (fasc. 5): 330–351. <sup>4</sup>Brummelen J van (1967). A world-monograph of the genera *Ascobolus* and *Saccobolus* (Ascomycetes, Pezizales). *Persoonia* (Suppl.) **1**: 1–260.

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