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SHORT COMMUNICATION

A tiny eyelash disc fungus found on cat faeces is the first collection of *Rhizoblepharia jugispora* since 1964

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On a recent fungal survey in Flinders Chase National Park, Kangaroo Island, several species of disc fungi were found, including an unusual one that had stemless, opalescent whitish, hairy discs. These were 1–3 mm diameter, up to 1 mm high, plane to shallowly concave with a slightly raised margin surrounded by long dark brown (eyelash) hairs which also covered the saucer-like exterior, the receptacle. The substrate was unexpected: cat faeces. We identified it as *Rhizoblepharia jugispora* Rifai, a species seemingly not collected or recorded since 1964, when A.C. Beauglehole found it on the ground at the Lower Glenelg River, Victoria, and sent it to amateur mycologist G.W. Beaton (Camperdown, Vic.). Beaton recognised this as an interesting find and sent it to the Royal Botanic Gardens, Kew. In his treatise on the Australasian Pezizales in the Kew herbarium, Rifai (1968) described it as the new genus (*Rhizoblepharia* Rifai) with one species, *Rhizoblepharia jugispora*. Specimens from the Beauglehole collection are in both the Kew (K-M000242509, K-M000242510) and University of Melbourne (MELUF102849a) herbaria, with some slides made from this type material also present at the Cornell Plant Pathology Herbarium (CUP-K-4296).

In July of this year, Pam and David Catcheside had been joined by Sam Correll from the Australian Wildlife Conservancy. We were searching in mixed heathland of *Banksia marginata*, *B. ornata* and species of *Acacia*, *Melaleuca*, *Leptospermum* and *Hakea* when Sam found the *Rhizoblepharia* specimens and identified their substrate as cat faeces (Fig. 1).

Apothecial discs were initially whitish with a tinge of pinkish tan, they darkened after collection and dried to a dull red brown. Microscopic examination showed the asci, containing the eight ascospores that result from meiosis, to be inamyloid (not reacting to Melzer's Reagent), operculate (opening at the tips by a small lid, an operculum), 190–220 × 16–21 (–25) µm, average 205 × 21 µm [10 asci measured], with each of the ascospores overlapping the next and occupying most of the ascus (Fig. 2A, B). Ascospores were fusoid (spindle-shaped), (32.5–) 35–45 × 11–15 µm, average 38.9 × 12.2 µm

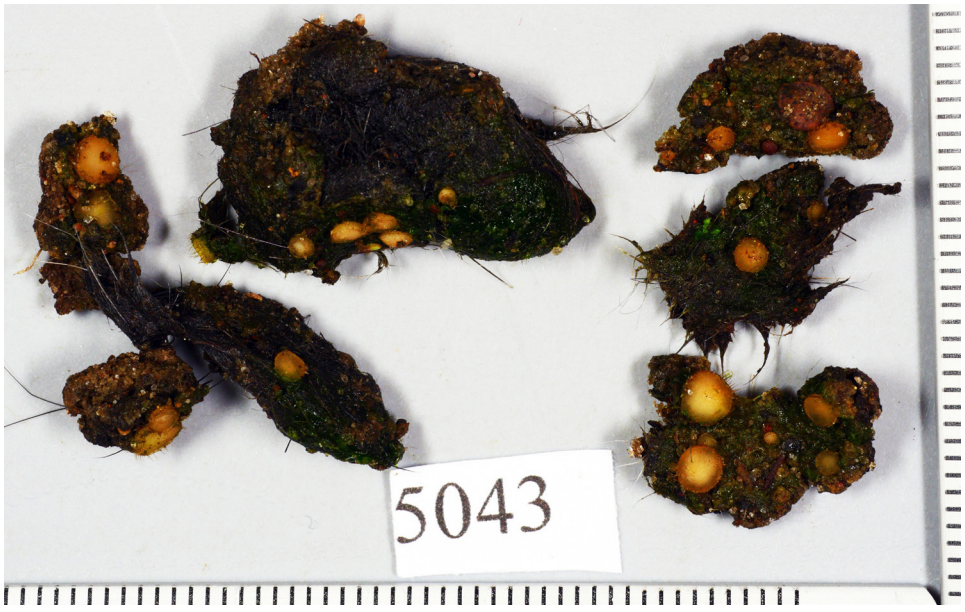


Fig. 1. *Rhizoblepharia jugispora* apothecia on cat faeces. — *P.S. Catcheside PSC 5043, D.E.A. Catcheside & S. Correll.*

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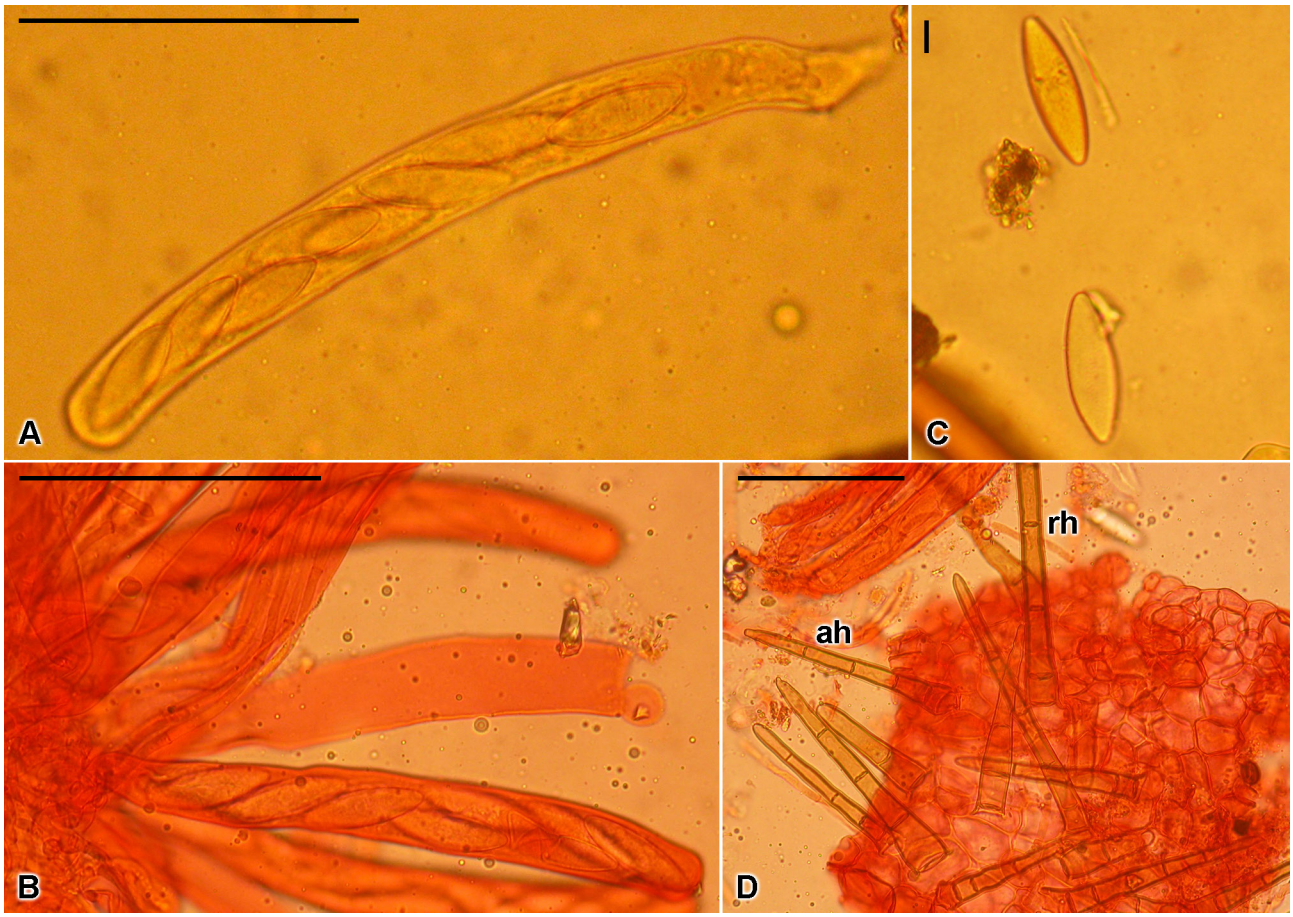


Fig. 2. *Rhizoblepharia jugispora*. **A** Ascus of showing overlapping ascospores; **B** asci with one ascus showing operculum (lid); **C** ascospores; **D** hairs: **ah** apothecial hair, **rh** rooting hair. Scale bars: A, B, D = 100 µm; C = 10 µm. — *P.S. Catcheside PSC 5043, D.E.A. Catcheside & S. Correll.*

[20 spores measured], hyaline (colourless), many were smooth, some showed series of wavy, horizontal ridges (Fig. 2C). Paraphyses, the sterile cells between asci, were straight, slender, sparingly septate, longer than the asci and slightly swollen at the tips. There were two sorts of hairs on the discs (Fig. 2D). Rooting hairs, buried in the tissue of the receptacle, were 400–800 (–1000) × 25–35 µm, dark reddish-brown, thick-walled, multiseptated, with an often forked base. Apothecial hairs growing from the surface of the receptacle were 110–190 (–300) × 10–18 µm, numerous, paler than apothecial hairs and up to 5-septate with a square to bulbous cell at the base. The cells on the outer layer of the receptacle (ectal excipulum) were subglobose to isodiametric, 18–40 (– 50) µm diameter. The middle layer of cells (medullary excipulum) was of interwoven, short-celled hyphae.

The asci in our collection were slightly longer than those from Rifai, but shape and measurements of ascospores conform well with his descriptions (Tab. 1). In determining the identity of our collection, the lozenge-shape of the ascospores was an especially useful character: the ascospores of other genera of 'eyelash fungi' are mostly ellipsoid with rounded, not extended 'ends' to the spores. The ornamentation on the ascospores appeared smooth in most ascospores, but more mature spores showed "the transversely running […] delicate wrinkles or ridges" described by Rifai (1968: 106). The arrangement of the ascospores in the ascus is similar to that described by Rifai (1968: 106): "obliquely uniseriate, their ends usually overlapping". Other characters of hairs and receptacle tissue conformed with his description.

Table 1. Measurements of two collections of *Rhizoblepharia jugispora* Rifai .

	Apothecia diameter (mm)	**Asci (µm)**	**Ascospores (µm)**	**Apothecial hairs (µm)**	**Rooting hairs (µm)**
PSC 5043	1–3	190–220 × 16–21 (–25)	(32.5–) 35–45 × 11–15	110–190 (–300) × 10–18	400–800 (–1000) × 25–35
Beauglehole s.n. (Rifai 1968)	0.5–2.5	180–200 × 16–20	34.5–44.5 × 12–15	40–180 × 10–17	to 900 × 20–35

The collection required careful handling because the substrate, cat faeces, may harbour parasites such as *Toxoplasma gondii* and parasitic worms. Discs were removed and cleaned from the substrate. Since the Beauglehole collection was made "on damp ground" (Rifai 1968: 105) with no reference to faeces, it seems likely that this species is not necessarily coprophilous. No more apothecia were found around the cat faeces, indicating that the faecal substrate was preferable to that of the dryer soil. The faecal material itself was in a moist, dense mat of cat hairs. More collections are necessary to know if the species is a true coprophilous dung-lover, or not.

Although we have surveyed for macrofungi in Flinders Chase National Park for 25 years (Catcheside & Catcheside 2024), we continue to find new species including rarities such as *Rhizoblepharia jugispora*. The number of species of fungi we know to be there is now well in excess of 750, making the Chase an especially important fungal hotspot.

Specimen examined

SOUTH AUSTRALIA. Mays to Platypus Waterholes track, Flinders Chase National Park, Kangaroo Island, on cat faeces, faeces admixed with abundant cat hairs, 35° 56' 40.51"S 136° 44' 9.09"E, alt. c. 65 m, in heath with eucalypts, *Banksia ornata* F.Muell. ex Meisn., *B. marginata* Cav., *Adenanthos macropodianus* E.C. Nelson, myrtaceous shrubs, 26 July 2026, *P.S. Catcheside PSC 5043, D.E.A. Catcheside & S. Correll* (AD).

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