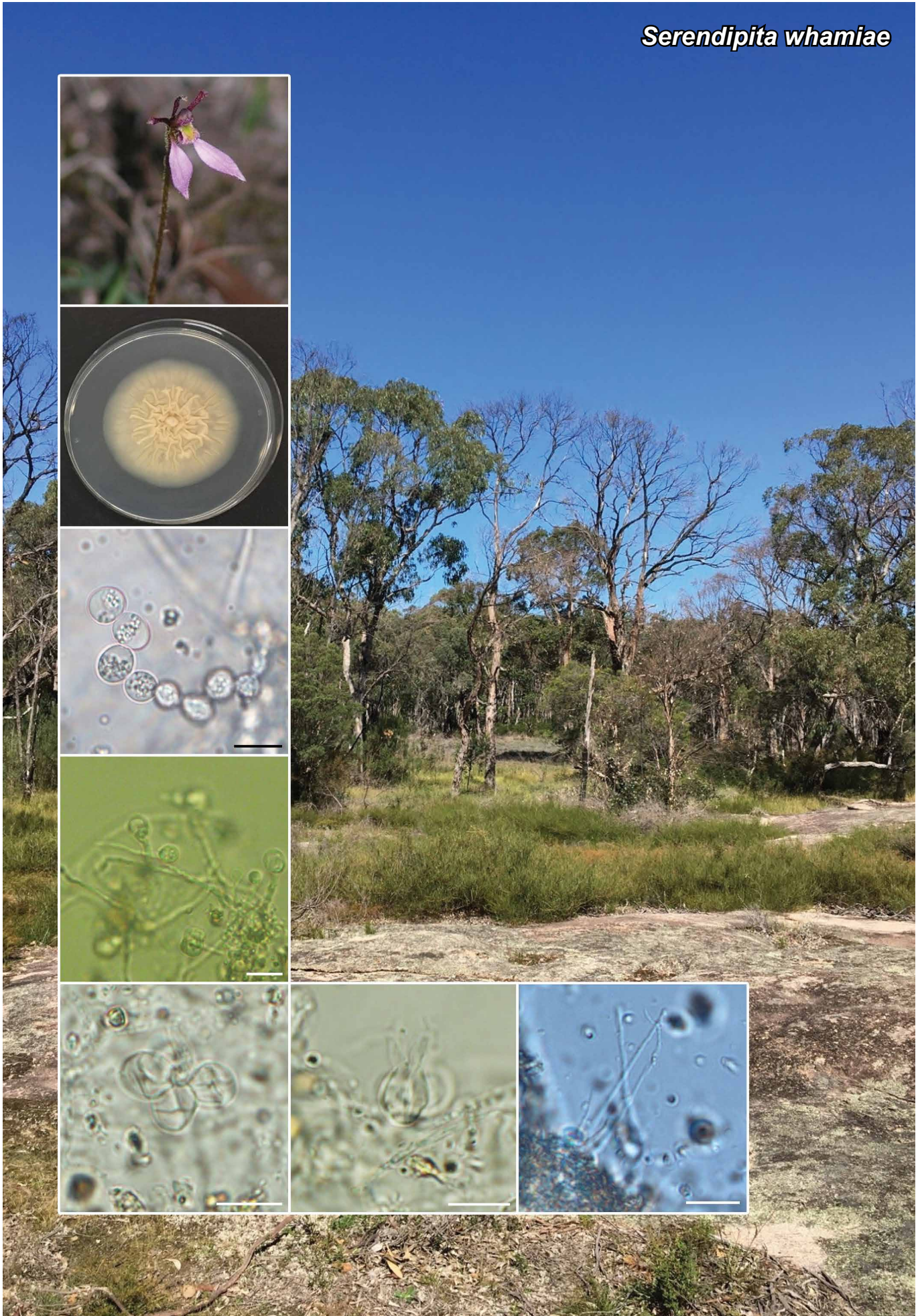


*Serendipita whamiae*





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***Serendipita whamiae*** Dearnaley, T.W. May & Linde, *sp. nov.*

*Etymology.* Named in honour of the well-known naturalist of the Stanthorpe region, Dell Wham.

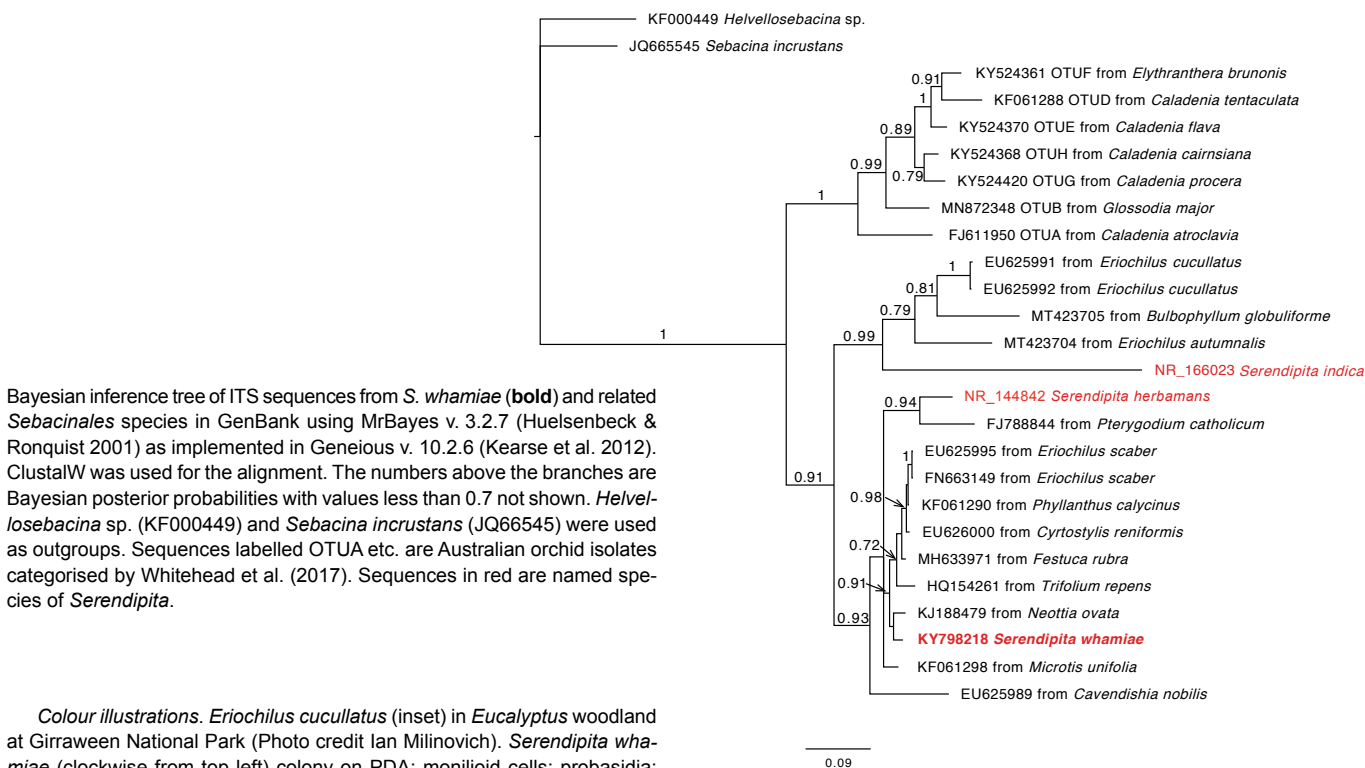
*Classification* — *Serendipitaceae*, *Sebacinales*, *Agaricomycetes*.

*Sporophore* produced by the soil on agar method (Warcup & Talbot 1967), grey, resupinate hyphae occurring loosely on the surface of soil clods. *Probasidia* globose 5–9 µm to subglobose 7–9 × 6–8 µm diam, some with sub-basidial cells. *Metabasidia* crucially septate, in groups of 2–3 on short stalks from hyphae, globose, 7 µm diam, to subglobose, 6–8 µm diam. *Basidia* ovate, 7–11 × 6–7 µm diam, longitudinally septate, with 2–4 sterigmata. *Sterigmata* 5–21 µm long, narrowing at apex. *Basidiospores* vermiform, some with septa, 11–50 × 1–2 µm diam.

*Culture characteristics* — Colonies on potato dextrose agar (PDA) up to 6 cm diam after 3 wk growth at 22 °C, pinkish buff, flattened, without aerial mycelium, margins irregular, surface wrinkled in the central part, reverse pinkish buff. *Hyphae* hyaline, thin-walled, lacking clamps, 2 µm in width. *Monilioid cells* globose, 7 µm diam to subglobose, 6–11 × 5–10 µm diam, in chains.

*Typus.* AUSTRALIA, Queensland, Stanthorpe, Girraween National Park, open *Eucalyptus* woodland, S27°49'13" E151°58'47", alt. 1008 m, isolated as an endophyte from roots of *Eriochilus cucullatus* (*Orchidaceae*), 7 Apr. 2016, J.D.W. Dearnaley EC3A (holotype BRIP 71159 living culture stored in a metabolically inactive state, ITS and LSU sequences GenBank KY798218 and MT422063, MycoBank MB835492).

*Notes* — *Serendipita* is a genus of Agaricomycetous fungi, many of which occur as endophytes in the roots of grasses, ericoids, liverworts and orchids (Weiss et al. 2016). The group is characterised by longitudinally septate basidia, long, worm-like basidiospores and DNA sequence data (Oberwinkler 1964, Roberts 1993, Basiewicz et al. 2012, Riess et al. 2014). *Serendipita whamiae* is a new species of *Serendipitaceae* with morphological similarities to the type species, *S. vermifera*, including probasidia 5–9 µm, longitudinally septate basidia and vermiform basidiospores, although the latter are shorter (11–50 µm) than that described by Oberwinkler (1964), Warcup & Talbot (1967) and Roberts (1993) at 30–60 µm, 45–64 µm, 21–86 µm, respectively. Compared to sequenced, named species within *Serendipita*, *S. whamiae* is distinct on BLAST matches from *S. herbamans* (ITS; 87 % identity over 637 bp; GenBank NR\_144842) and *S. indica* (ITS; 68 % identity over 685 bp; GenBank NR\_166023) and also from the type of the genus, *S. vermifera* (LSU; 87 % identity over 568 bp; GenBank HM030724). Otherwise, there is a series of unnamed environmental and endophyte sequences (EU625995 to KY798218) that form a well-supported clade including the sequence from the type of *S. whamiae* (all within 96 % similarity) that could prove conspecific, but for which morphological data is not available. Whitehead et al. (2017) found that *Serendipita* defined by multigene species delimitation had maximum within species variation of 4.1 % for ITS.



*Colour illustrations.* *Eriochilus cucullatus* (inset) in *Eucalyptus* woodland at Girraween National Park (Photo credit Ian Milinovich). *Serendipita whamiae* (clockwise from top left) colony on PDA; monilioid cells; probasidia; metabasidia; basidium; basidiospores. Scale bars = 1 cm (colony and inset), 10 µm (all others).

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