

***Stemonitis fusca* Roth** Mag. Bot. Römer & Usteri 1(2) : 26 (1787) SM17 (= PDD 110397)

Collection designation: A94

Substrate: macropod (*Macropus robustus?*) dung

Collection site: 4 km NW Pomonal, Victoria (Rowe Road), lat. 37°10' S, long. 142°35' E; Eucalyptus forest on edge of cleared farmland

Collection date: 28 June 1997

Collector: Dave Munro (Dunkeld)

Identifiers: Ann Bell and Dan Mahoney

Date Ann incubated the dung: 12 January 2006; **Date Ann first observed the dung:** 9 March 2006

Fungi also seen on this dung during the incubation period: *Chaetomium cupreum* and *Coniochaeta discospora* (both species identified independently by Ann and Dan)

Voucher material: Dried dung herbarium specimen SM17 (= PDD 110397) accompanied by 2 Shear's mounting fluid (SMF) slides – moderate heating drove out the air, returned some spores to their globose shape and didn't appear to affect color or 'natural' morphologies); colored slide photos of sporangia in-situ on the dung and microscopic detail of spores among the capillitial threads (in SMF mounts).

Brief description: **Sporangia** cylindrical, peridium very fugacious (already gone when I observed the sporangia), brown (dissecting scope view) in low light and lighter brown to tan in brighter light, with a shiny black stalk, sporangia alone 2-3.5 mm (width 330 µm – n=1), stalk alone 500-600 µm long and tapering gradually upward and into the sporangium (as the columella), and approx. 5 µm wide at the columella apex. Sporangium plus stalk roughly 2.5-4 mm long with the stalk representing roughly 1/5th or less of the overall length. **Columella** dark brown, smooth, extending to the apex of the sporangium and giving rise to brown capillitial threads at intervals along its entire length. **Peripheral capillitial reticulate net** composed of brown, narrow-threaded, angular compartments roughly 7-15 µm in greatest diameter [these small diameter compartments made it difficult to disperse spores in the initial 70% ETOH mounts – so that the capillitium (inner portions and surface net) could be seen]. The surface net reasonably complete. **Spores** globose, spinose reticulate (spinose in median optical section and reticulate in surface view), brownish to somewhat violet brown, 7-9 µm in diameter (n=10).

Publications consulted:

1) Castillo A., Moreno G., Illana C. & Lago J. 1997. A critical study of some Stemonitales. *Mycological Research* 101(11): 1329–1340. Following extensive comparisons of collections and past treatments of *S. nigrescens*, *S. fusca* and variants between them AND with spore SEM work on several, they conclude the following on p. 1335:

Stemonitis fusca Roth, *Mag. Bot. Römer & Usteri* 1(2): 26
(1787). (Figs 35–50)
≡ *S. fusca* var. *nigrescens* (Rex) Torrend, *Broteria Bot.* 7: 8
(1908).
= *S. nigrescens* Rex, *Proc. Acad. Philadelphia.* 43: 392 (1891).

Furthermore, they state on page 1335 under Discussion and conclusions: “Lister (1925) and Hagelstein (1944) both regarded *Stemonitis nigrescens* as a variety of *S.fusca*. Martin & Alexopoulos (1969), Farr (1976) and Nannenga-Bremekamp (1991), keep both taxa as different species, and differentiate between them in their keys according to the colour, size and relative stalk length of the sporangium, in addition to slight differences in the spore ornamentation as seen by transmitted light.”

2) Eliasson, U.H. & Keller H.W. 1999. Coprophilous myxomycetes: updated summary, key to species, and taxonomic observations on *Trichia brunnea*, *Arcyria elaterensis*, and *Arcyria stipara*. *Karstenia* 39: 1–10.

3) Eliasson, U. & Lundqvist, N. 1979. Fimicolous myxomycetes. *Bot. Notiser* 132: 551–568. Their small *Stemonitis nigrescens*-like form they treat as a variant of *Stemonitis fusca*.

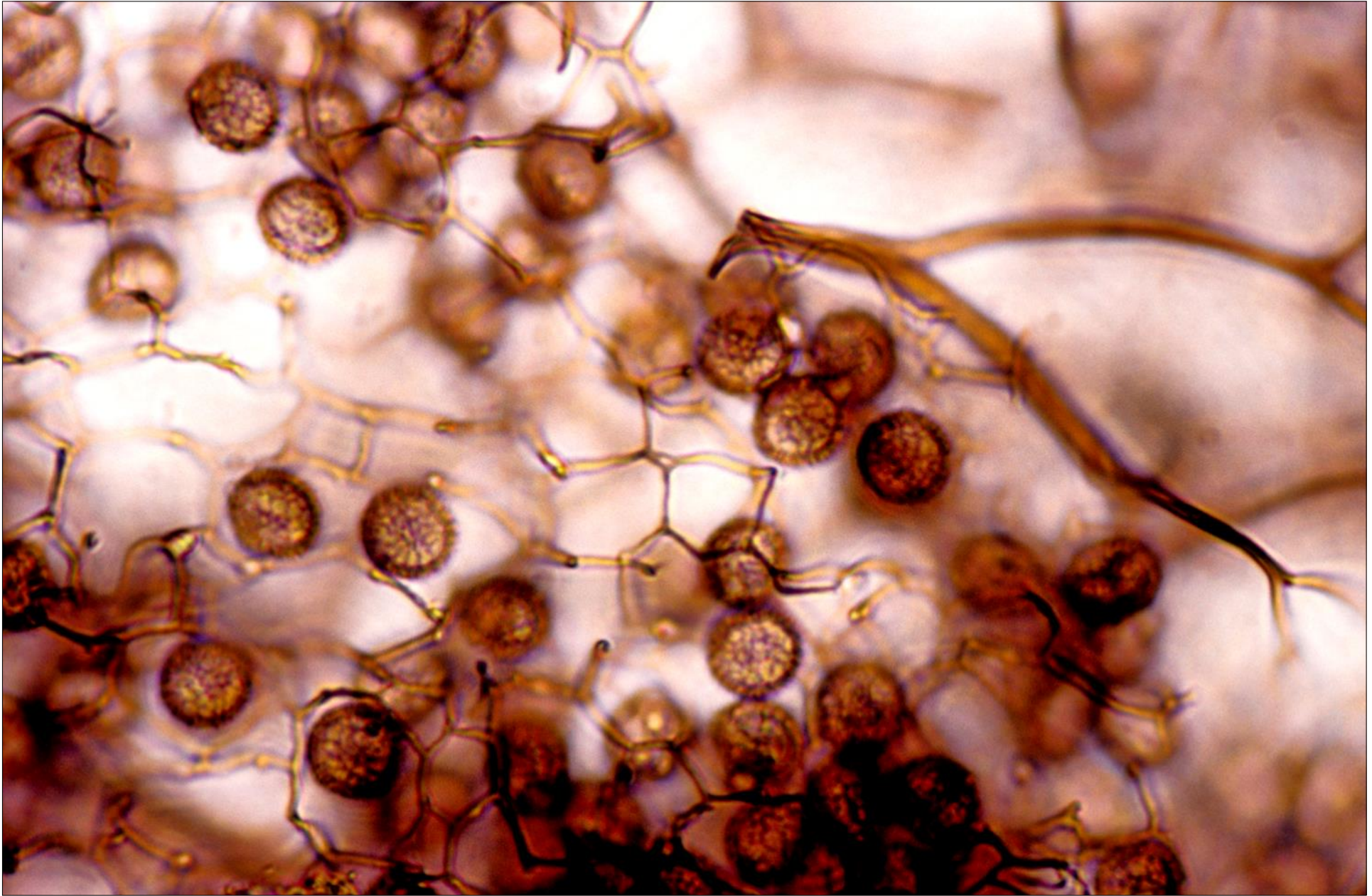
4) Martin, G.W. & Alexopoulos, C.J. 1969. *The Myxomycetes*. The University of Iowa Press, Iowa City. 1–561. See pp. 193,194 & 197,198. They recognize *Stemonitis nigrescens* & *Stemonitis fusca* as separate species. Their key to *Stemonitis* species on pp. 190,191 and their description of *S. nigrescens* on pp. 197,198 are readily available. The description of *S. nigrescens* is similar to our own for SM17.

5) Stephenson, S.L. 2003. *The Fungi of New Zealand Volume 3: Myxomycetes of New Zealand*. Fungal Diversity Research Series 11: 1-238. He follows Castillo et al. (above) in this reference but collections in PDD Landcare Fungal Research include *S. fusca*, *S. fusca* var. *fusca* (our SM17), *S. fusca* var. *nigrescens* and *S. nigrescens*.

6) Mycobank recognizes *S. fusca* as the correct name while Index Fungorum recognizes both *S. fusca* & *S. nigrescens*



In-situ view of
Stemonitis fusca
SM17 fruiting bodies
on macropod dung.
White vertical bar is
800 μm long.



***Stemonitis fusca* SM17 reticulated spores and capillitial surface net in SMF (heated). Photographed under the X100 objective using brightfield microscopy.**