***Delitschia marchalii* Berl. & Voglino PDD 126098 (= AEB 1412)**

Collection site: Ngapukeariki, Haparapara River E2015068 N5799705, alt 549m; native forest: hard beech, tanekaha on ridges, tawa, hinau, N. rata, kamahi, podocarp

Collection date: 22 April 2025; **Incubated in a moist chamber:** 26 April 2025

Substrate: red deer (*Cervus elaphus*) dung

Collector: Ian Flux; **Identifier:** Dan Mahoney

Voucher materials: No dried red deer dung specimen but one Shear's mounting fluid (SMF) glass slide; photos of partially squashed ascoma, peridium, asci and ascospores in water mounts.

Primary references:

1. Luck-Allen E.R. & Cain R.F. 1975. Additions to the genus *Delitschia*. Can. J. Bot. 53: 1827–1887. See their treatment of *Delitschia marchalii* on the next page.

2. Doveri F., Cacialli G. & Caroti V. 1999. Preliminary study on fimicolous Loculoascomycetes in Italy. Contribution to the study of fimicolous fungi – XXX. Doc. Mycol. 29 (113): 35–70. See their treatment of *Delitschia marchalii* on the page after next.

Comments:

There are 28 previous records of *Delitschia* in PDD (as of August 2025) – 2 of which are *D. marchalii*:

1. PDD 73373 (= AEB 213) – the Jerry Grossman collection from deer dung in the Tararuas, Akatarawa Range 1974, I.D. Ann Bell. This collection appeared in Ann's 1983 NZ publication on dung fungi pp. 45 & 79

2. PDD 82113 (= AEB 891) – Ann Bell's collection from hare dung at Harwood's Hole (18th NZ Fungal Foray) in May 2004, I.D. Ann

Luck-Allen E.R. & Cain R.F. 1975. Additions to the genus *Delitschia*. Can. J. Bot. 53: 1827–1887.

Portions dealing with *D. marchalii* from pp. 1843, 1844, 1857 & 1862 are reproduced below.

22. *Delitschia marchalii* Berl. & Vogl. in Sacc., Syll. Fung. Add. 1–4: 127. 1886.
Figs. 16–20, 151

≡ *Delitschia* sp. (?) Marchal, Bull. Soc. Bot. Belg. 23 (2): 1884.

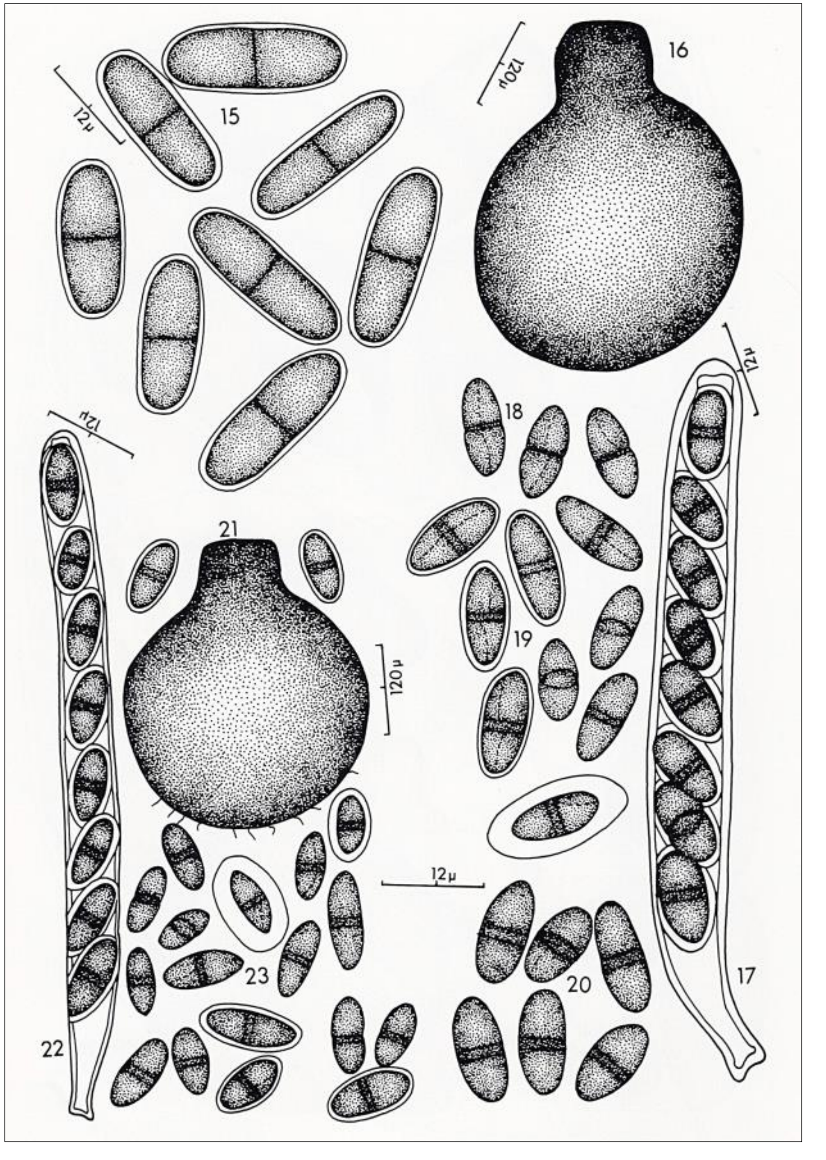
Perithecia embedded, black, smooth, subglobose or globose, 265–400 × 200–450 μ, when globose, 300–450 μ. Neck black and opaque, smooth, papillate, with circular ostiole, emergent to short-cylindric, 100–350 × 100–175 μ. Asci numerous, eight-spored, cylindrical, 60–100 × 7–11(–12) μ, rounded at apices, each terminating in a short stipe. Paraphyses filamentous, hyaline, septate, numerous, less than 1 μ in diam. Ascospores abundant, obliquely uniseriate, ellipsoid, 10–12(–14) × 5–6 μ, rounded at both ends, transversely uniseptate; nonconstricted at median septum or slightly so, cells nonseparable; when immature hyaline, later yellowish brown, finally dark brown and opaque, each ascospore surrounded by a narrow gelatinous layer which swells conspicuously in water. Germ slit lateral, extending entire length of cell.

HABITAT: common on dung of various animals especially rabbit, goat, and deer.

COMMENTS:

Delitschia marchalii appears to be one of the more common species of *Delitschia* and is found on a variety of dung. Its relationship is clearly with *D. perpusilla* and the two might present a confusing problem in identification at the extreme limits. The ascospores of *D. perpusilla* average 8–10 × 3–4 μ while those of *marchalii* are larger (10–12 × 5–6 μ).

FIG. 15. *Delitschia consociata*. Ascospores. (Based on Mouton, Bull. Soc. R. Bot. Belgique, 26: 175. 1887.) FIGS. 16–20. *Delitschia marchalii*. TRTC 39356. Fig. 16. Perithecium. TRTC 39129. Fig. 17. Mature ascus. TRTC 44804. Fig. 18. Three ascospores, each slightly constricted at median septum. TRTC 38819. FIG. 19. Ascospores without constriction; one with expanded gelatinous layer. LPS 5982. FIG. 20. Six ascospores.



Doveri F., Cacialli G. & Caroti V. 1999. Preliminary study on fimicolous Loculoascomycetes in Italy. Contribution to the study of fimicolous fungi – XXX. Doc. Mycol. 29 (113): 35–70.

Portion dealing with *Delitschia marchalii* is reproduced below.

Delitschia marchalii Berl. & Voglino in Sacc., *Syll. Fung.* Add. I-IV: 217, 1886. ***Fig.3***

= *Delitschia sp.* Marchal, *Bull. Soc. Roy. Bot. Belg.* 23 (2): 16, 1884.

MATERIAL: **ITALY:** COSENZA, S. Demetrio Corone, 800 m, about fifty gregarious specimens fully embedded (except the neck) in substratum, that is to say goat (***Capra hircus*** ?) dung in culture, C. Lavorato, 4.98., 552.4.-S. Demetrio Corone, CLSM 02798.

Pseudothecia ostiolate, 500-570 µm high, 300-370 µm wide, pyriform, smooth, semimembraneous, dark brown, with a black, carbonaceous, 150-250 x 100-130 µm, cylindrical, tuberculate, straight or slightly curved neck.

Spores hyaline in the early stages, later on light brown, finally dark brown, surrounded by a thin gelatinous sheath, obliquely or vertically uniseriate, (10) 10.5-12 (12.6) x 4.7-5.5 µm, fusiform (Q= 2.00-2.75; Q= 2.34), thick-walled, subdivided by a transversal and scarcely deep septum in two usually isometric, not separable subunits, both conical, rather pointed at the apex, provided with a parallel or slightly oblique germ slit.

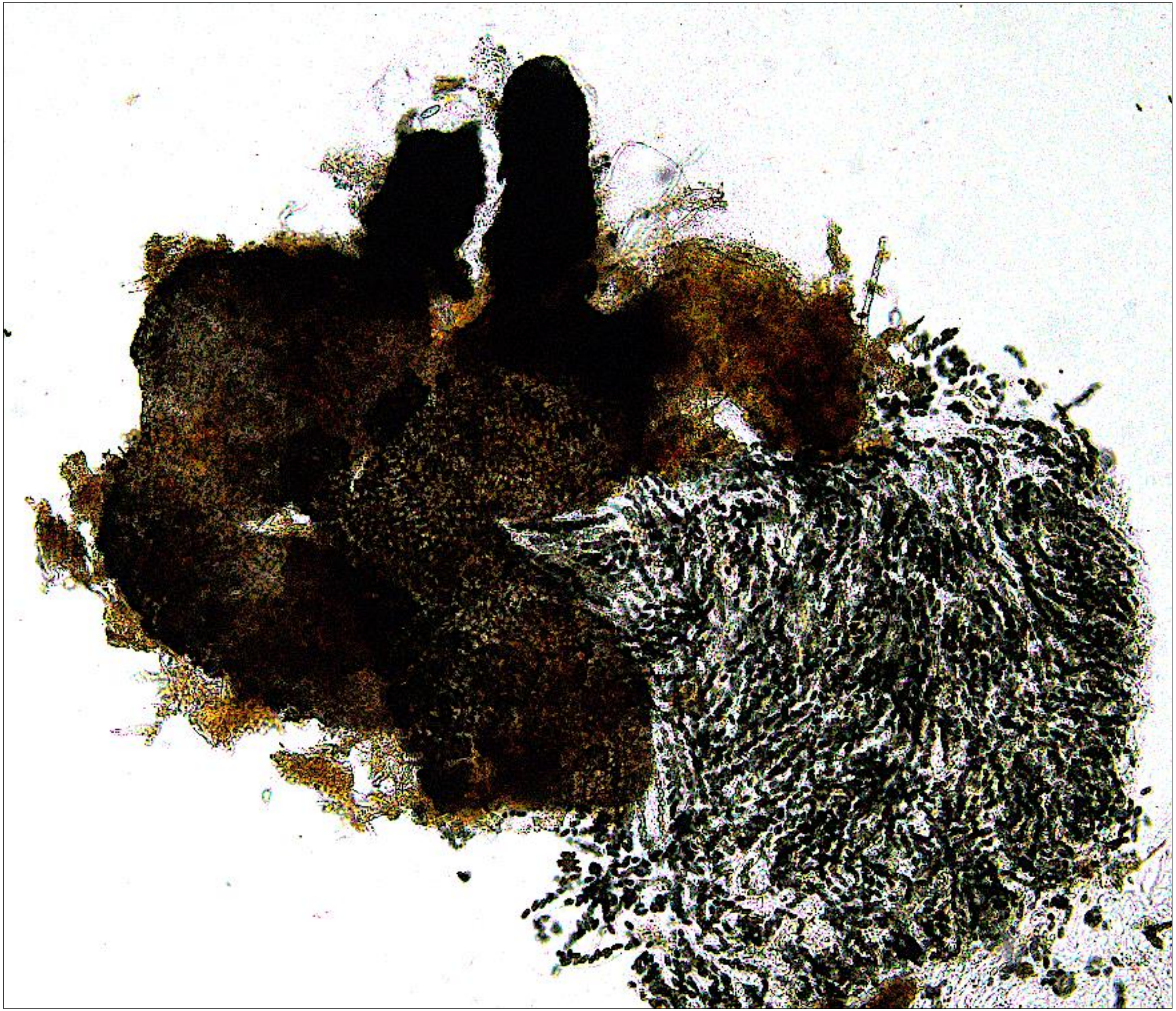
Asci 80-100 x 8-9 µm, 8-spored, non-amyloid, bitunicate, cylindrical, with a short, hardly lobate tail as well as with a rounded apex and a simple apical ring.

Pseudoparaphyses numerous, filiform, 1-1.5 µm wide, wavy, septate, very ramified and anastomosed, containing a few hyaline vacuoles, sometimes enlarged at the apex.

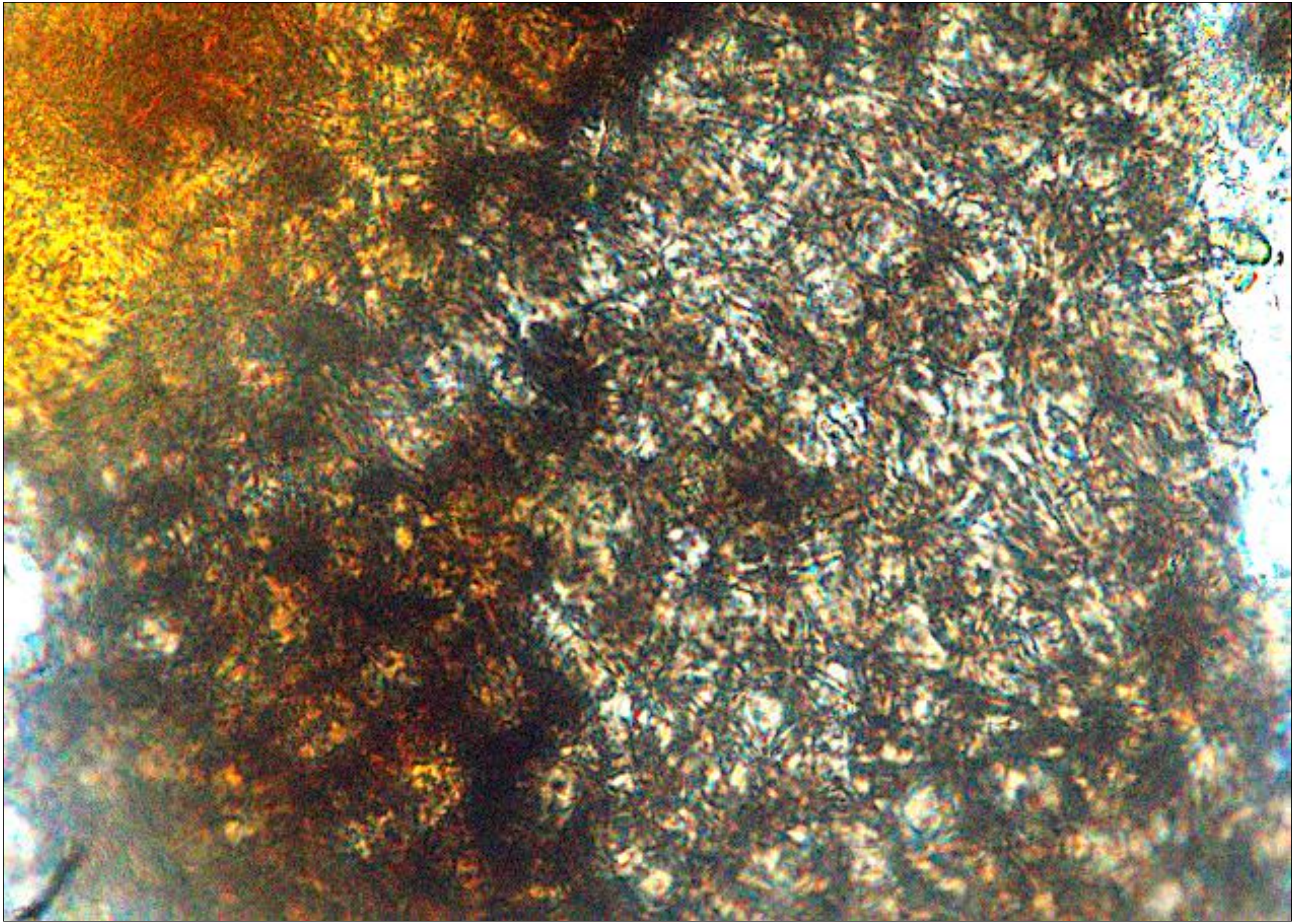
Peridium layered: exostratum pseudoparenchymatous, made up of polygonal, rather thin-walled, brown hyphae, 3-5 µm wide, here and there clothed with carbonaceous sprinklings; at the neck the hyphae are almost fully clothed with carbonaceous material and turn roundish or even papillate. Endostratum made up of lighter, cylindrical hyphae, 3-5 µm wide.

Observations. No particular note on this very common and widespread species, which can be found on the excrements of many herbivores, particularly on rabbit dung (Luck-Allen & Cain, 1975).

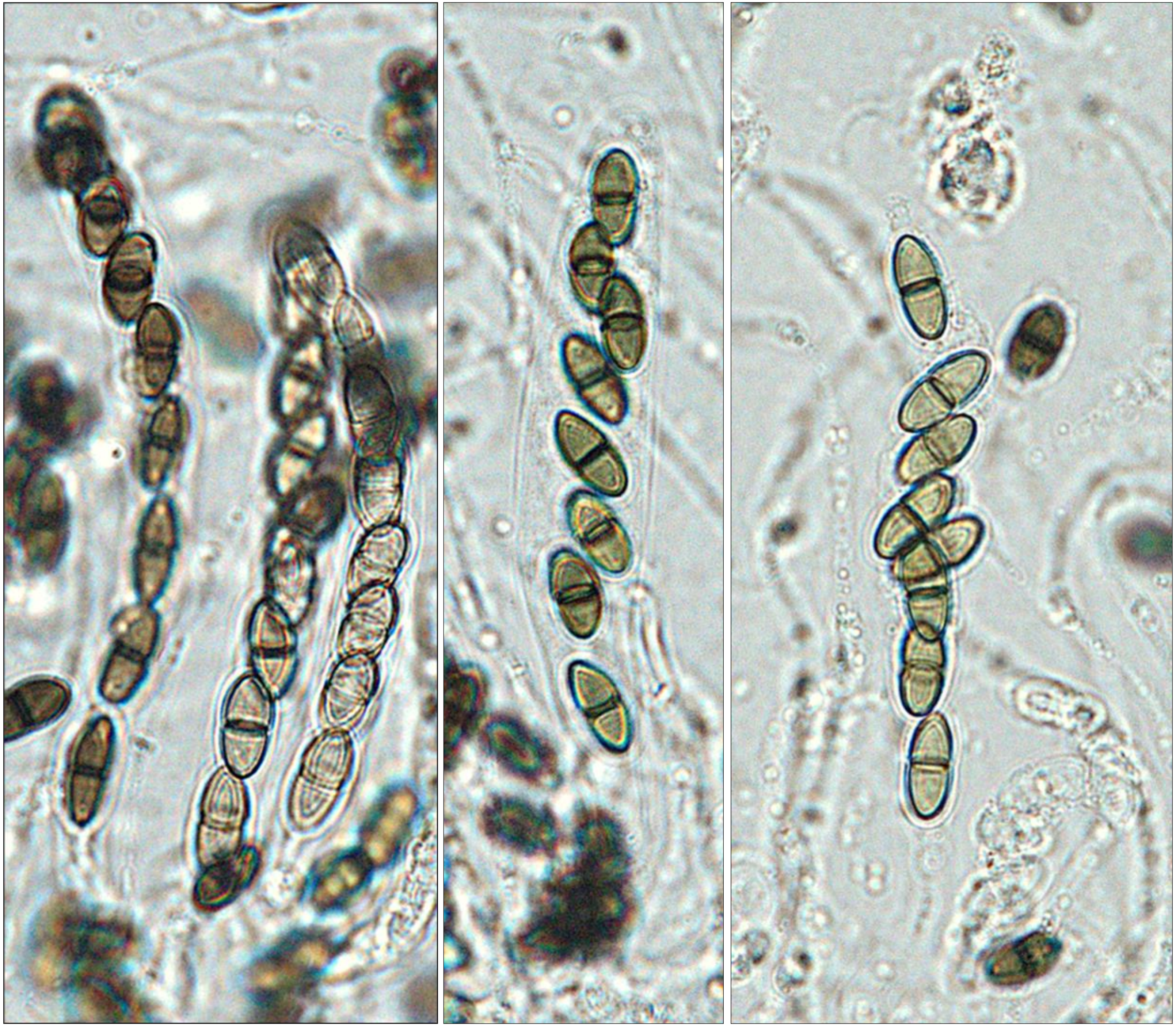
D. marchalii is easily distinguishable from the other ***Delitschia*** Auersw. by the very small spores. Only ***D. perpusilla*** Speg. possesses similar but even smaller spores (8-9 x 3-4 µm).



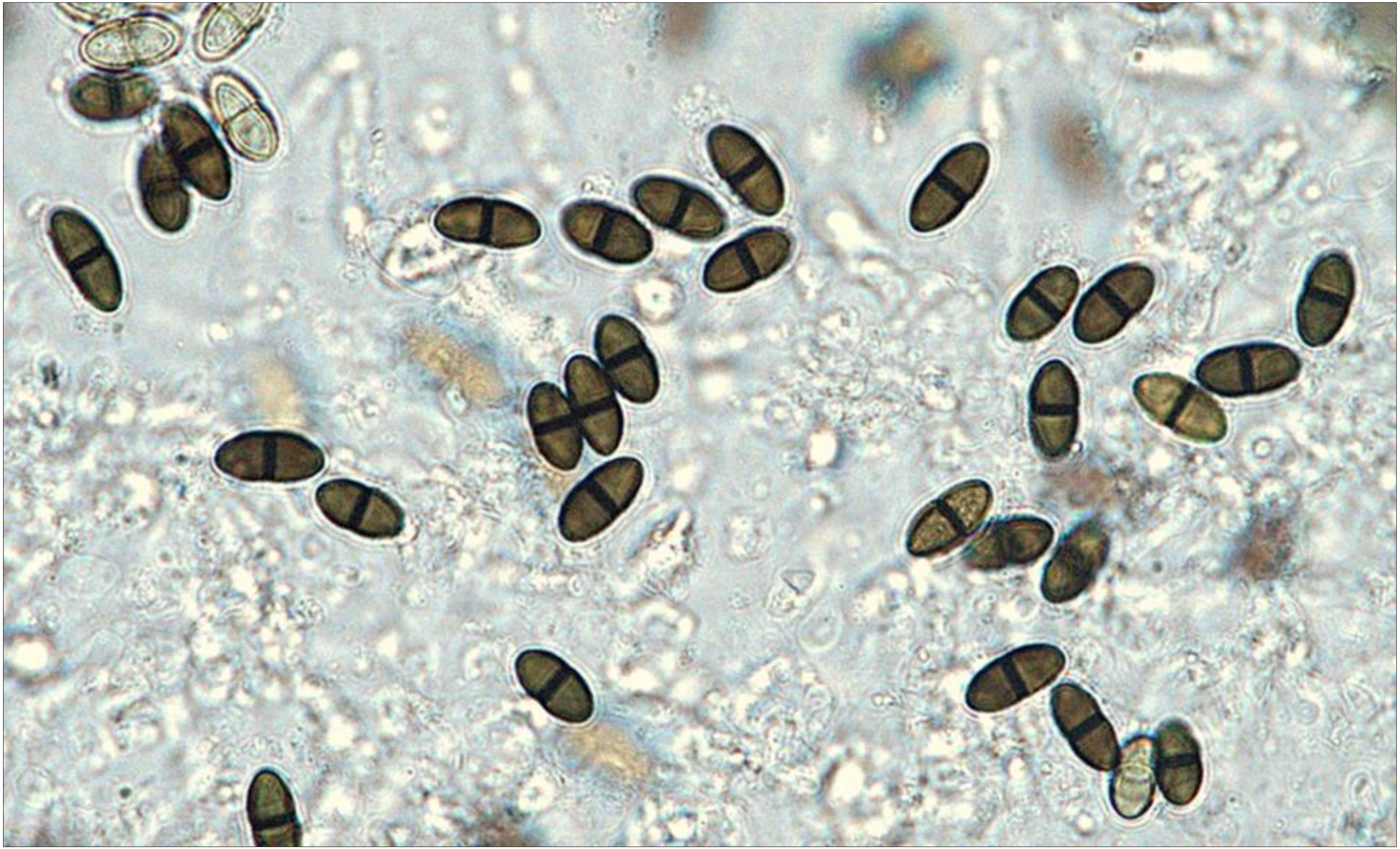
AEB 1412. Highly fertile pseudothecium with extruded asci in a water slide squash mount using the X10 objective and bright-field microscopy. Few fertile ascomata were seen and this one was observed on 10 August 2025 – long after the dung was incubated on 26 April.



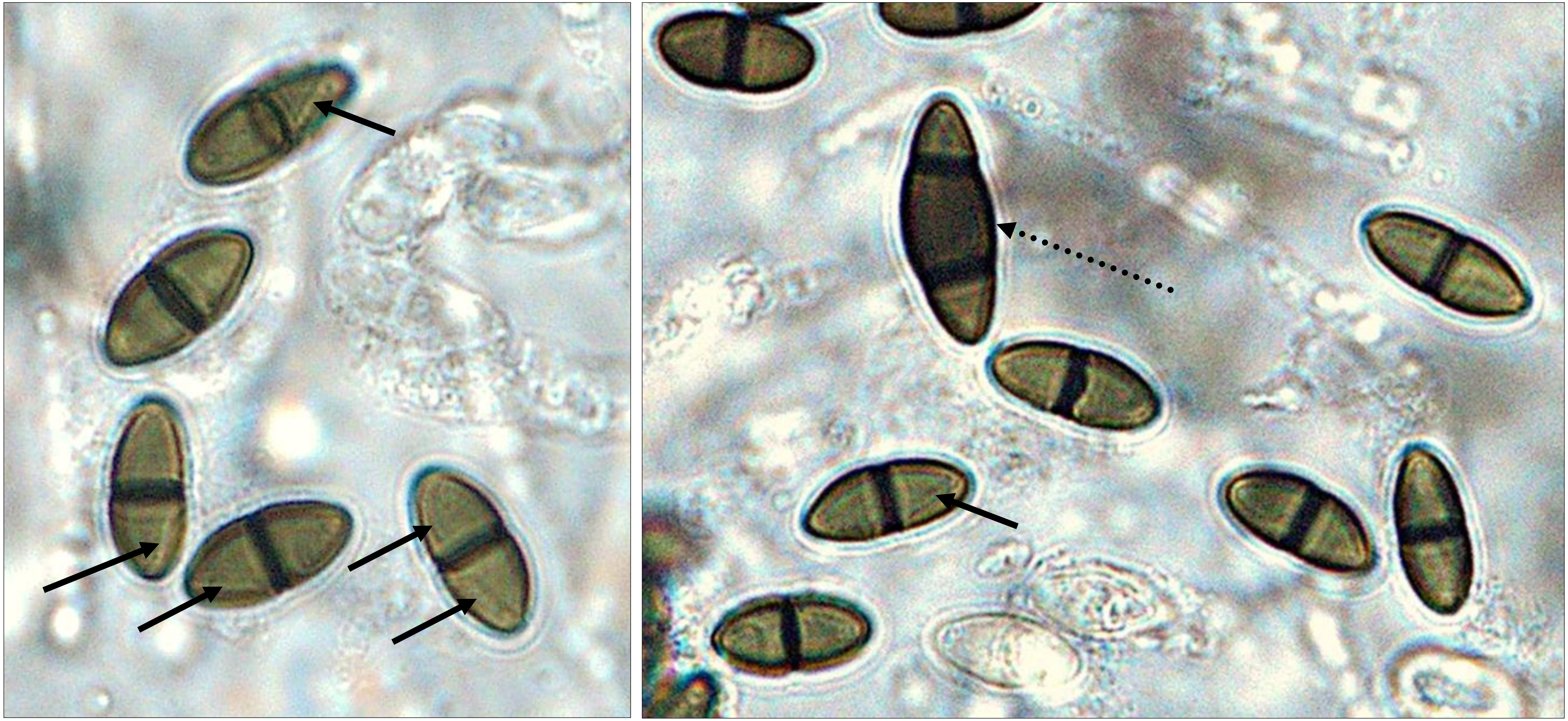
AEB 1412. Peridium layers seen after further squashing of the same pseudothecium mount seen on the previous page using the X100 objective and brightfield microscopy.



AEB 1412. Asci with variously mature ascospores. Seen after further squashing of the same pseudothecium mount seen on the previous pages using the X100 objective and brightfield microscopy. Ascospores 10–11 × 4–5 µm.



AEB 1412. Fully mature free ascospores seen in the same water mount as used for photos on the previous pages, X100 objective and brightfield microscopy. Ascospores 10–11 × 4–5 µm.



AEB 1412. Fully mature free ascospores seen in the same water mount as used for photos on the previous pages, X100 objective and brightfield microscopy. Ascospores 10–11 × 4–5 µm. Note the solid-black arrowed diagonal longitudinal germ slits and the unusual dotted-black arrowed ascospore.