***Podospora pyriformis* (A. Bayer) Cain PDD 124539 (= AEB 1384) – a good match**

Collected: 13 June 2024; **Incubated:** 6 August 2024

Substrate: rabbit (*Oryctolagus cuniculus*) dung

Collection site: Dargaville, Baylys Beach & nearby batch lawns

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

Voucher materials: dried rabbit pellets accompanied by one Shear's mounting fluid (SMF) semi-permanent microscope slide; Zeiss SV 11 Stereo-zoom dissecting microscope in-situ photos of the fruiting bodies using a MC80 camera and Olympus BX51 microscopic slide photos of fruiting body details using a DP28 camera; primary reference consulted and Dan's brief comments.

Primary Reference consulted: Lundqvist N. 1972. Nordic *Sordariaceae* s. lat. *Symbolae Botanicae Upsalienses* 20: 1-374. His description and illustrations of *Podospora pyriformis* are reproduced on the next page.

Brief comments:

1. PDD records (accessed 13 September 2024): 9 records – all from dung (6 from NZ identified by Ann Bell, 2 from NZ by Ann Bell and Dan Mahoney and 1 by Nils Lundqvist from the USSR).

2. One of the 9 records – PDD 73640 (= AEB 470) wild pig dung collected by Fran Kell in Wainuiomata Valley and identified by Ann was sequenced by Robert Debuchy in France who deposited that sequence in Genbank DQ166962 - 18S ribosomal RNA, 28S ribosomal RNA, 5.8S ribosomal RNA, internal transcribed spacer 1, internal transcribed spacer 2 Dan and Ann also deposited an axenic culture of PDD 73640 at Westerdijk Fungal Biodiversity Institute as CBS 115805.

3. Dan's further comments for AEB 1384 accompany his in-situ photos from the rabbit dung incubation chamber and his compound scope slide photos.

Lundqvist N. 1972. Nordic *Sordariaceae* s. lat. *Symbolae Botanicae Upsalienses* 20: 1-374.
Portions of pages 160–162 are reproduced below.

9. *Podospora pyriformis* (Bayer) Cain 1962: 460 (Fig. 26, pl. 22)

Sordaria pyriformis Bayer 1924: 113. — Coll. orig. on horse dung from the Royal Vineyard, Praha, Czechoslovakia, x.1920, Bayer; non-existent;[1] neotype: Lqt 3443-c (UPS). — *Pleurage pyriformis* (Bayer) C. Moreau 1953: 249.

Perithecia usually aggregated, semi-immersed, broadly obpyriform, 960–1440 × 670–690 μ, sparsely covered with flexuous, olivaceous, septate, 3.5 μ thick hairs, ±glabrous with age; neck conical to cylindrical, 240–480 × 240–290 μ. *Peridium* membranaceous, semi-transparent, yellowish olivaceous, except in the black opaque neck, 3-layered; outer peridial cells angular, mostly thin-walled, 6–15 μ in diam., rounded and inflated on the perithecial neck and there arranged in a loose palisade. *Paraphyses* filiform-ventricose. *Asci* 8-spored, 385–480 × 38–60 μ, swelling up to 120 μ in width, clavate, with a c. 170 μ long stipe and a tapering, somewhat pointed, c. 25 μ wide apex; no apical ring; calotte c. 7 μ in diam; subapical chamber c. 3.5 μ broad. *Spores* biseriate, at first hyaline, one-celled, clavate, then transversely uniseptate; upper cell ranging through yellowish, olivaceous to black-brown, 36–45 × 22–27 μ, ellipsoidal, slightly inequilateral, truncate at the base, conical above, with an apical, excentrically placed germ pore; pedicel 28–54(–60) × 8.5–12 μ, cylindrical to slightly clavate, somewhat curved, collapsing. Upper *gelatinous cauda* subapical, 70–120(–170) × 12–13 × 6–8 μ, tapering, not covering the germ pore, reniform in cross-section, with a proximal, longitudinal, broad upper furrow; basal cauda attached to the end of the pedicel, 70–145 × 8–10 μ, tapering, round in cross-section, rarely with a proximal narrow furrow; both caudae solid, without visible inner structure, somewhat blackening in Indian ink, persistent, but swelling in water, becoming cylindrical; distal part inflated into a fusiform body, 15–30 μ wide in the upper cauda, narrower in the basal cauda.

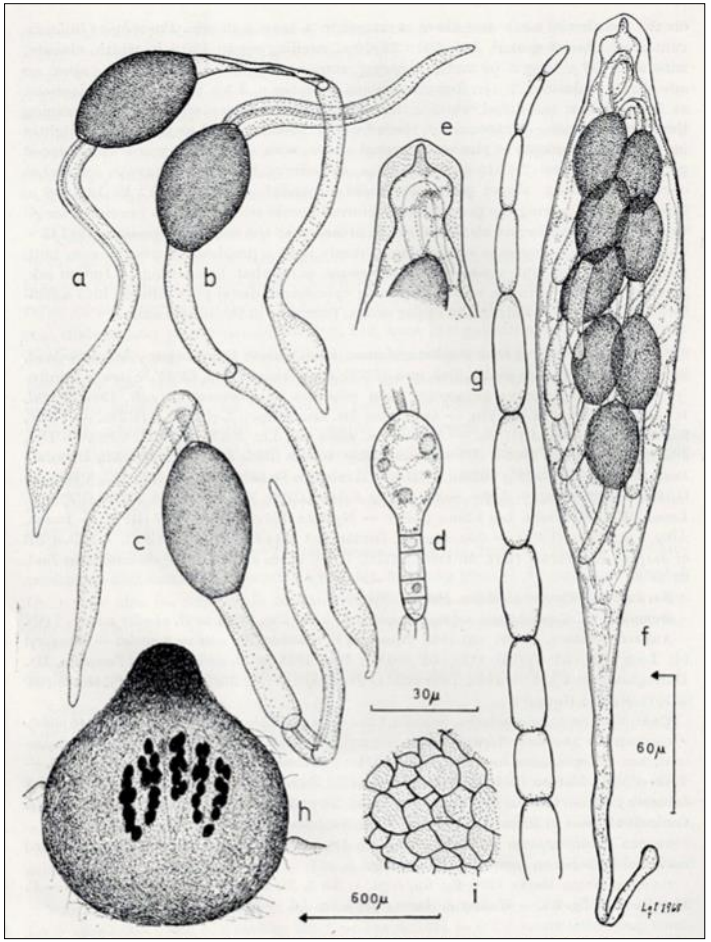
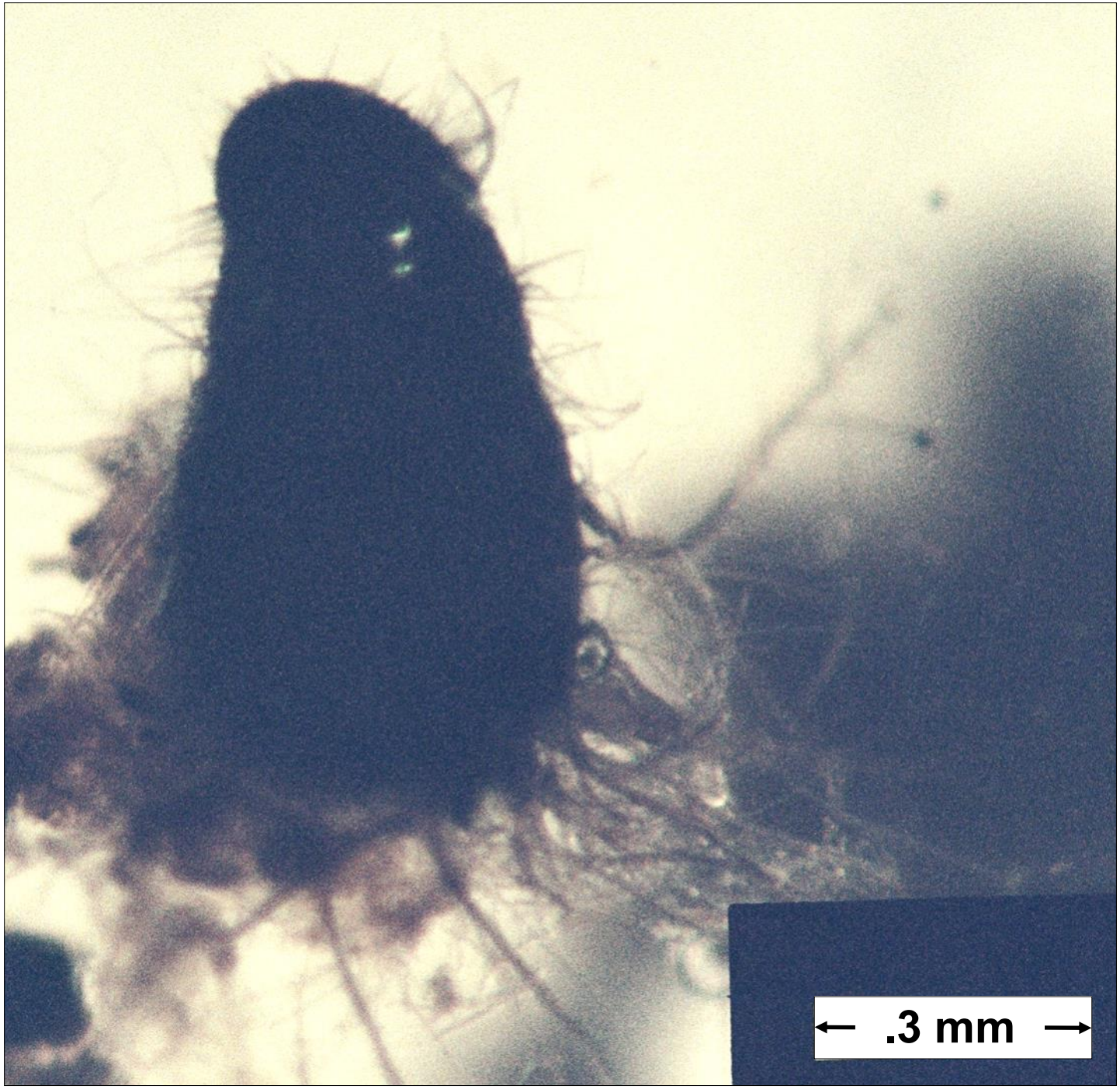
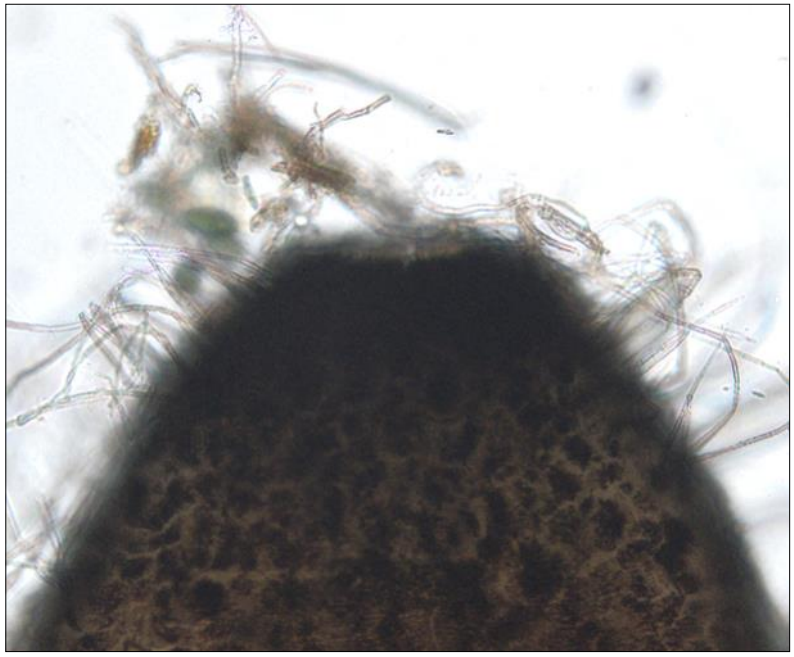


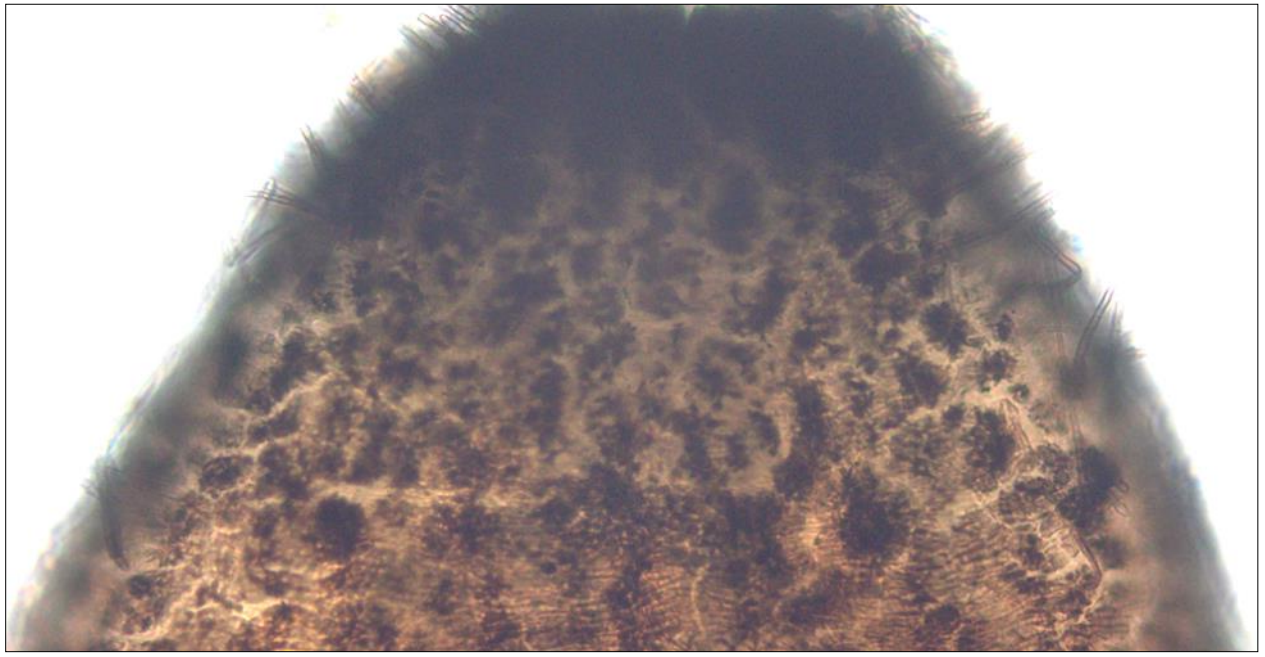
Fig. 26. *Podospora pyriformis*. *a-c, e-i:* G 1333-b (UPS). *d:* Lqt 4066-b (UPS). Drawn from living specimens and lactic blue mount *(d)*. *a-c:* Mature spores with not or a little enlarged caudae; upper spore with collapsed pedicel. *d:* Young, atypical, septate spore. *e:* Ascus tip. *f:* Mature but not inflated ascus. *g:* Paraphysis. *h:* Perithecium. *i:* Peridium in horizontal view.

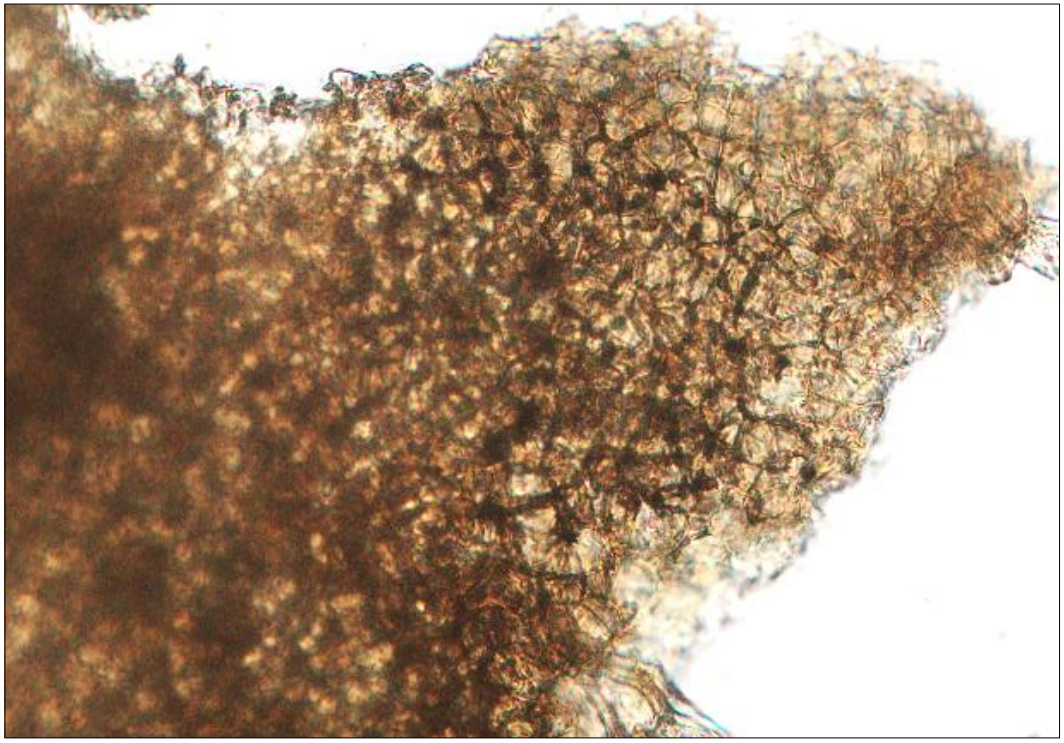
AEB 1384. Sept. 13. An in-situ overhead view, using the Zeiss SV 11 Stereo-zoom dissecting microscope, of perithecia in paper towelling near the rabbit dung in the moist incubation chamber. The focus is on the perithecium ostioles. Most of each perithecium is sunken in the paper as was also true for perithecia observed on the dung.



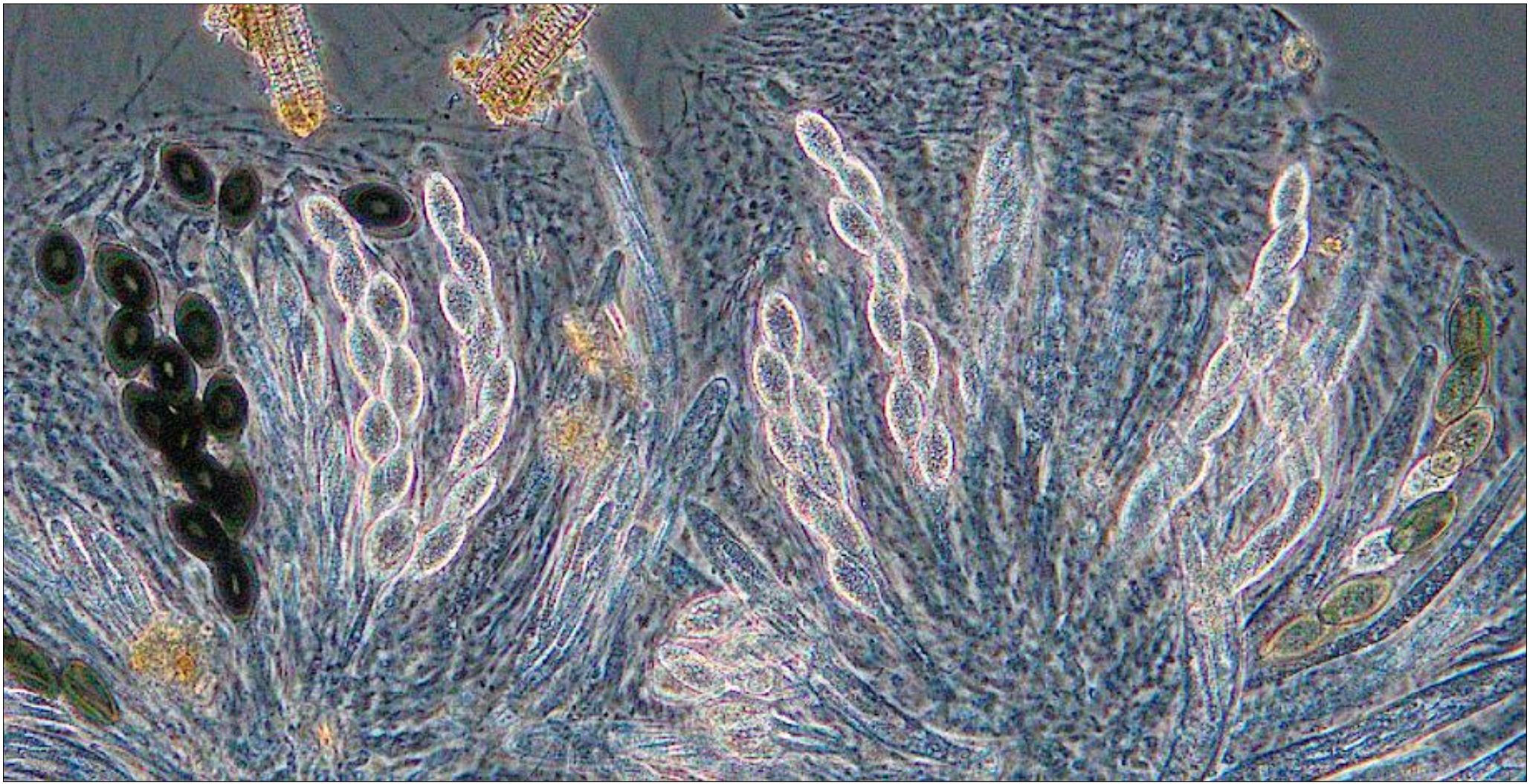
AEB 1384. Sept. 13. An in-situ side view, using the Zeiss SV 11 Stereo-zoom dissecting microscope, of a perithecium removed from the rabbit dung to a slide water droplet where most of the dung was removed. Note the basal hyphal cables growing into the dung and the scattered thin wavy flexuous hairs on the emergent upper portion of the perithecium. Closeups of this uppermost portion are shown on the next page.



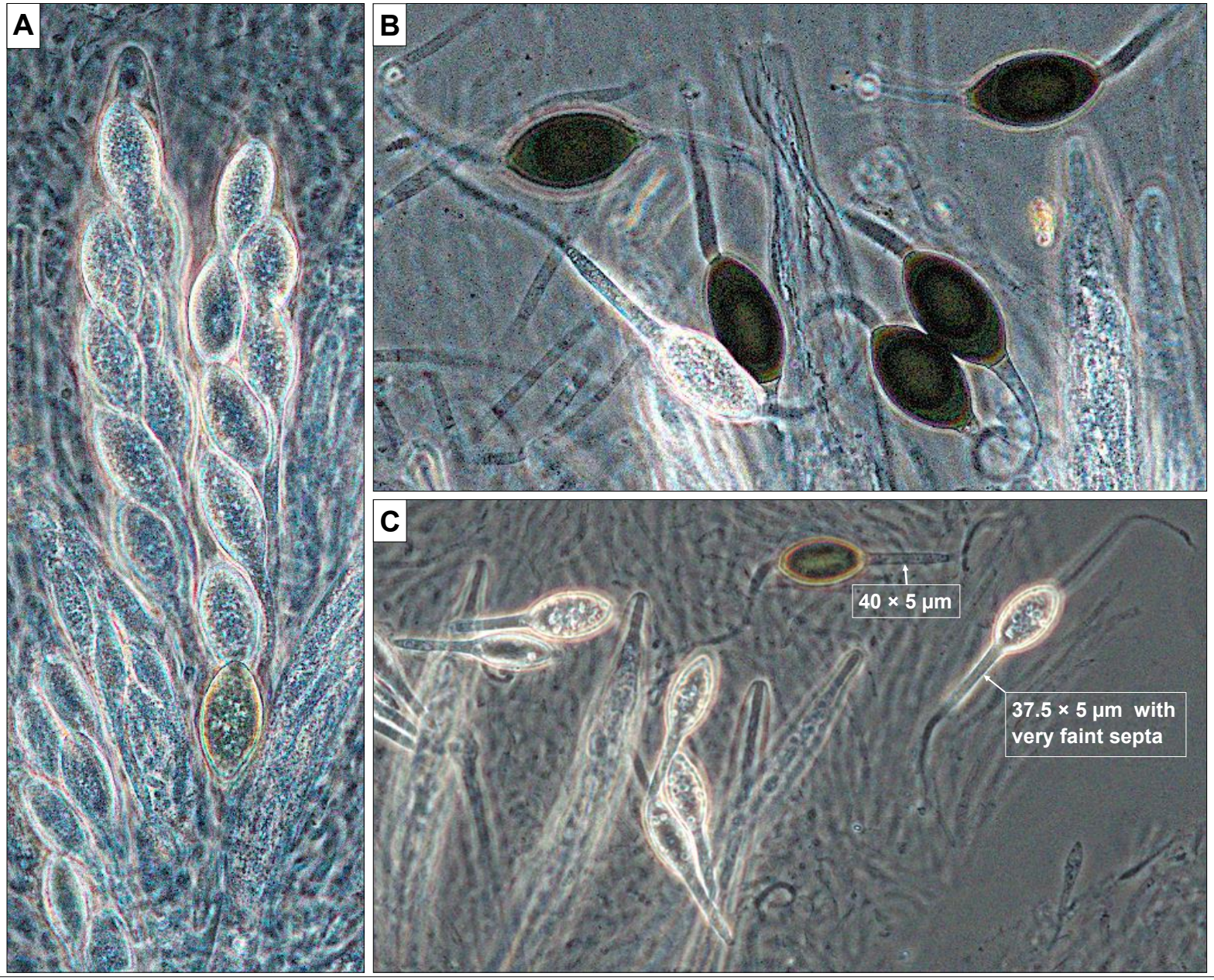




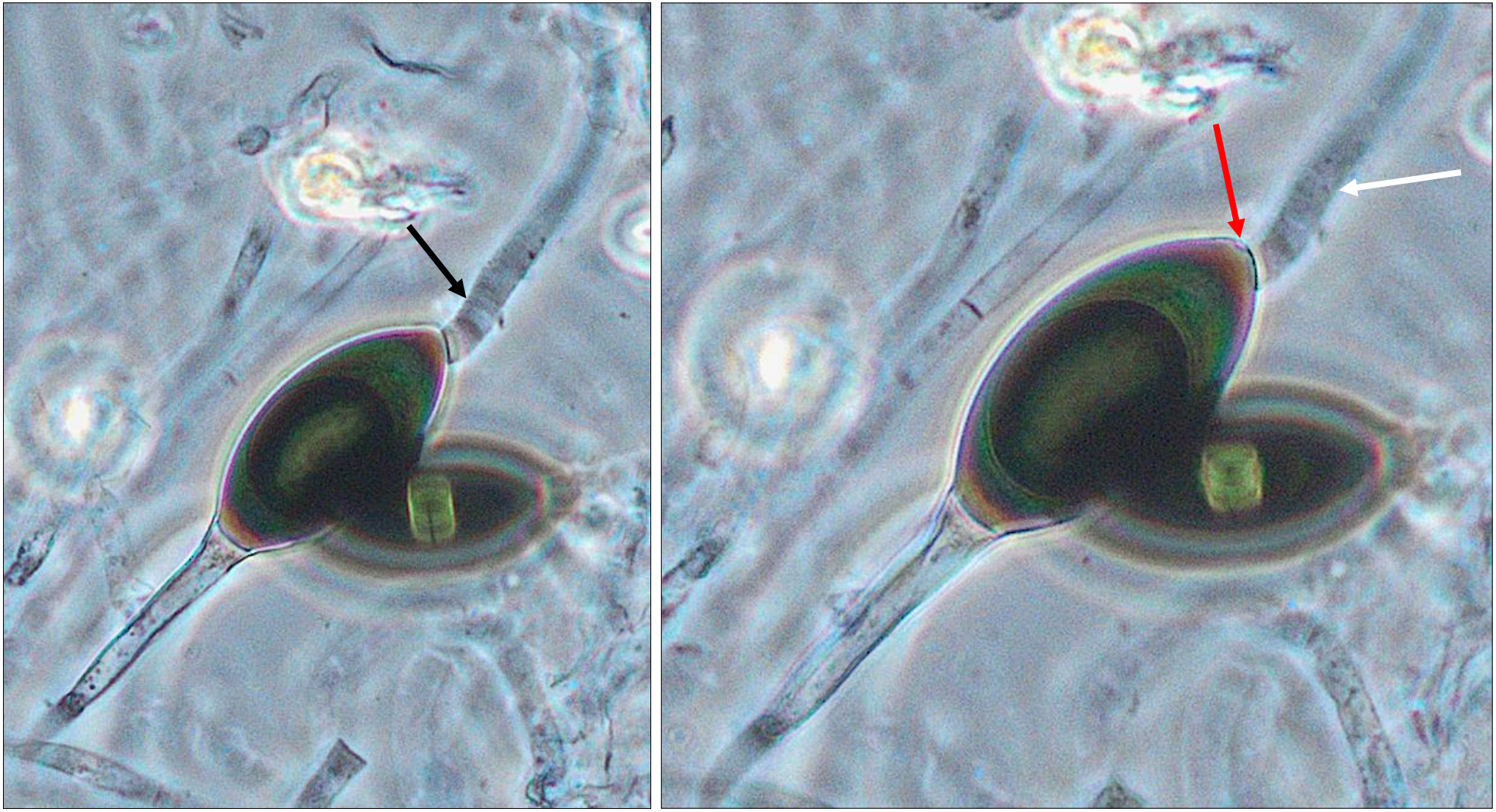
AEB 1384. Sept. 15. Photos of perithecium peridium detail taken in water slide mounts using an Olympus BX51 microscope and DP28 camera. Upper 2 photos the same field of view in the uppermost perithecium using the X20 objective: Left photo not enlarged and showing the thin wavy flexuous hairs. Right photo enlarged, overexposed and focused on the outermost peridium with its horizontal rows of rectangular cells. Lower left photo taken the same day using the same microscope and camera but a different water mount using the X40 objective. This squash mount of the perithecium venter peridium emphasizes a textura angularis portion of the peridium. Better descriptions of perithecium peridium detail would require sectioning that I was unable to provide.



AEB 1384. Sept. 10. Photo of a hymenium squash taken from a SMF slide mount using a X20 objective (slightly enlarged) and phase microscopy with an Olympus BX51 microscope and DP28 camera. Note the mostly immature asci with their 8 biseriately arranged hyaline ascospores, body cells and pedicels are present but not yet separated by a septum.



AEB 1384. Sept. 10, A&B; Sept. 7, C. Photos of a hymenium squash taken from SMF slide mounts using a X40 objective (enlarged) and phase microscopy with an Olympus BX51 microscope and DP28 camera. A. Ascospores as described on previous page. B. Mature & immature spores. Note faint pedicel septations on immature spore. C. Note arrowed pedicels on mature & immature spores.



AEB 1384. Sept. 15. Photos of the same mature ascospore taken with slightly different focuses and enlargements from a SMF slide mount using the X40 objective and phase microscopy (Olympus BX51 microscope and DP28 camera). Body cell 42.5 × 20 µm, pedicel 32.5×5 µm. Left photo: Note the longitudinal striations and variable shading in the larger upper cauda (black arrowed). This feature appears unreported by Lundqvist or others. Right photo: This focus provides a good view of the apical, slightly eccentrical germ pore & subapical upper cauda (red & white arrows, respectively.

AEB 1384. Sept. 7. Photos of 2 nearly mature complete ascospores (left photo) and 1 immature ascospore with typical caudae (right photo) taken from water slide mounts using the X40 objective and brightfield microscopy (Olympus BX51 microscope and DP28 camera). Note the central furrow in the caudae (arrowed).