

***Podospora curvicolla* (G. Winter) Niessl – AEB 1348 (= PDD 120013)**

Species Fungorum current name: *Pseudoechria curvicolla* (G. Winter) Y. Marín, A.N. Mill. & Stchigel, in Marin-Felix Y, Miller AN, Cano-Lira JF, Guarro J, García D, Stadler M, Huhndorf SM, Stchigel AM. 2020. Re-Evaluation of the Order Sordariales: Delimitation of Lasiosphaeriaceae s. str., and Introduction of the New Families Diplogelasinosporaceae, Naviculisporaceae, and Schizotheciaceae. Microorganisms. 8(9, no. 1430): 1-39.

Collection site: Along the Waiwhetu Stream, in grassy areas that border Callaghan Innovation (base of the Wainuiomata Hill Road), Lower Hutt, New Zealand.

Collection date: 12 November 2017

Substrate: European rabbit (*Oryctolagus cuniculus*) dung

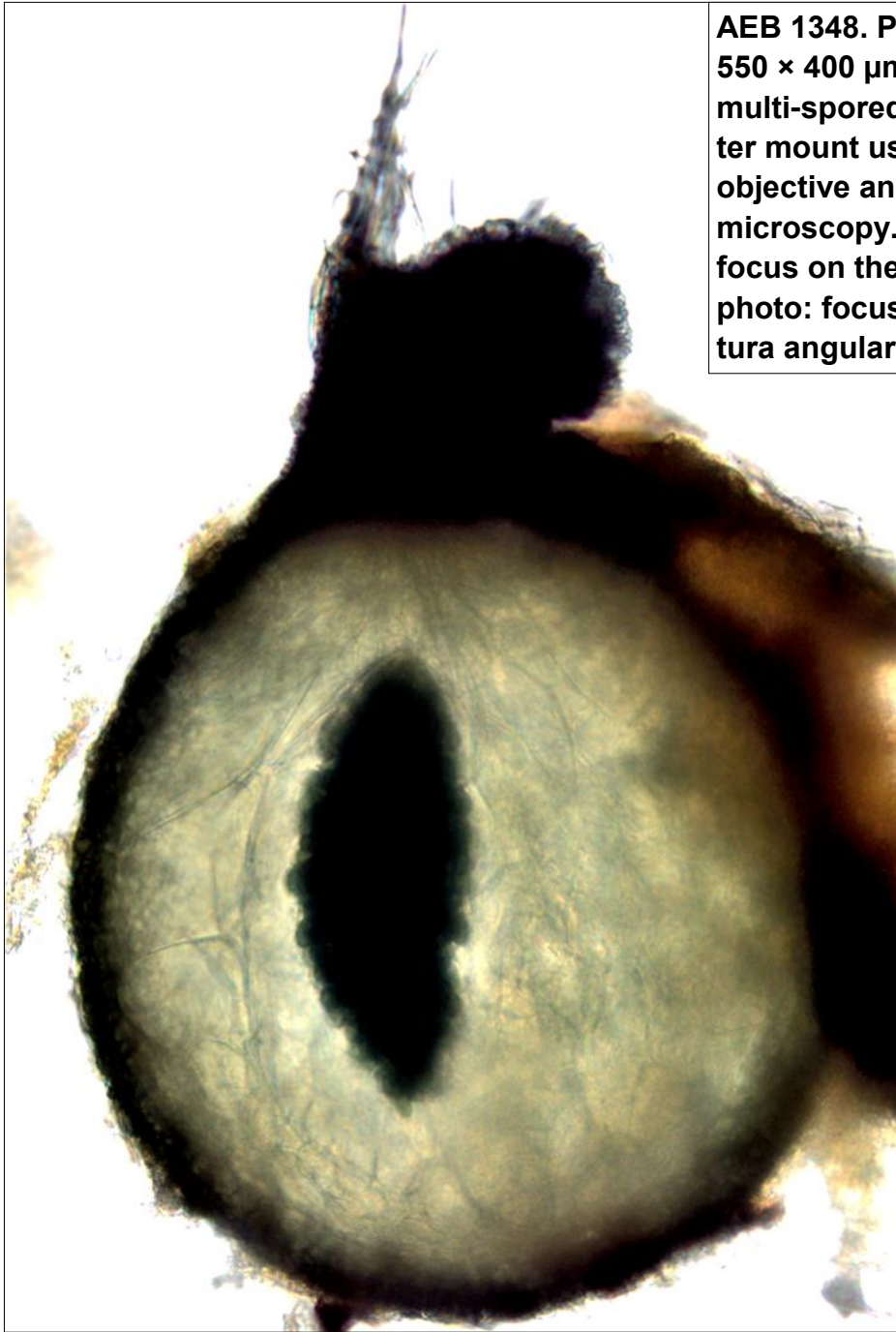
Collector & Identifier: Dan Mahoney

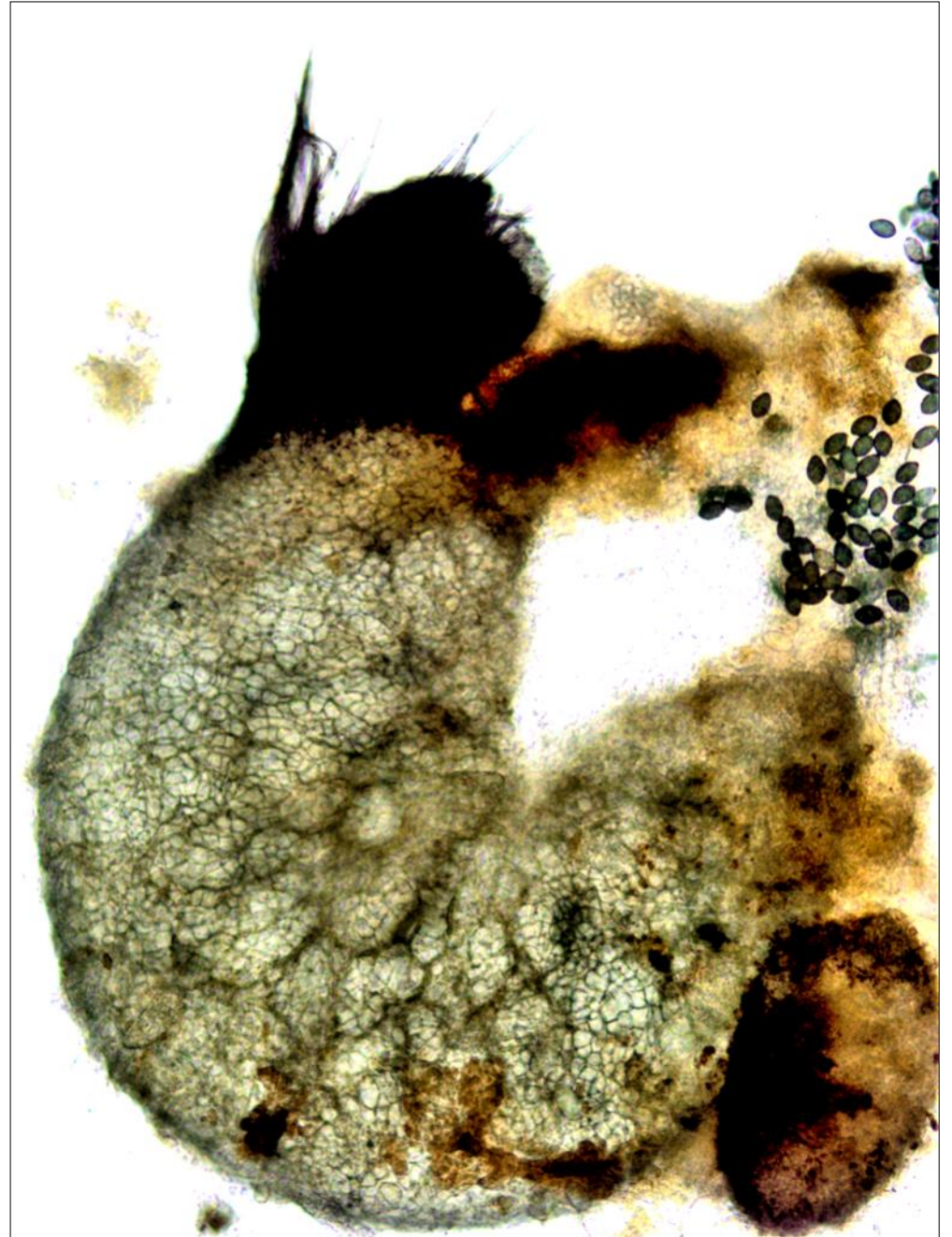
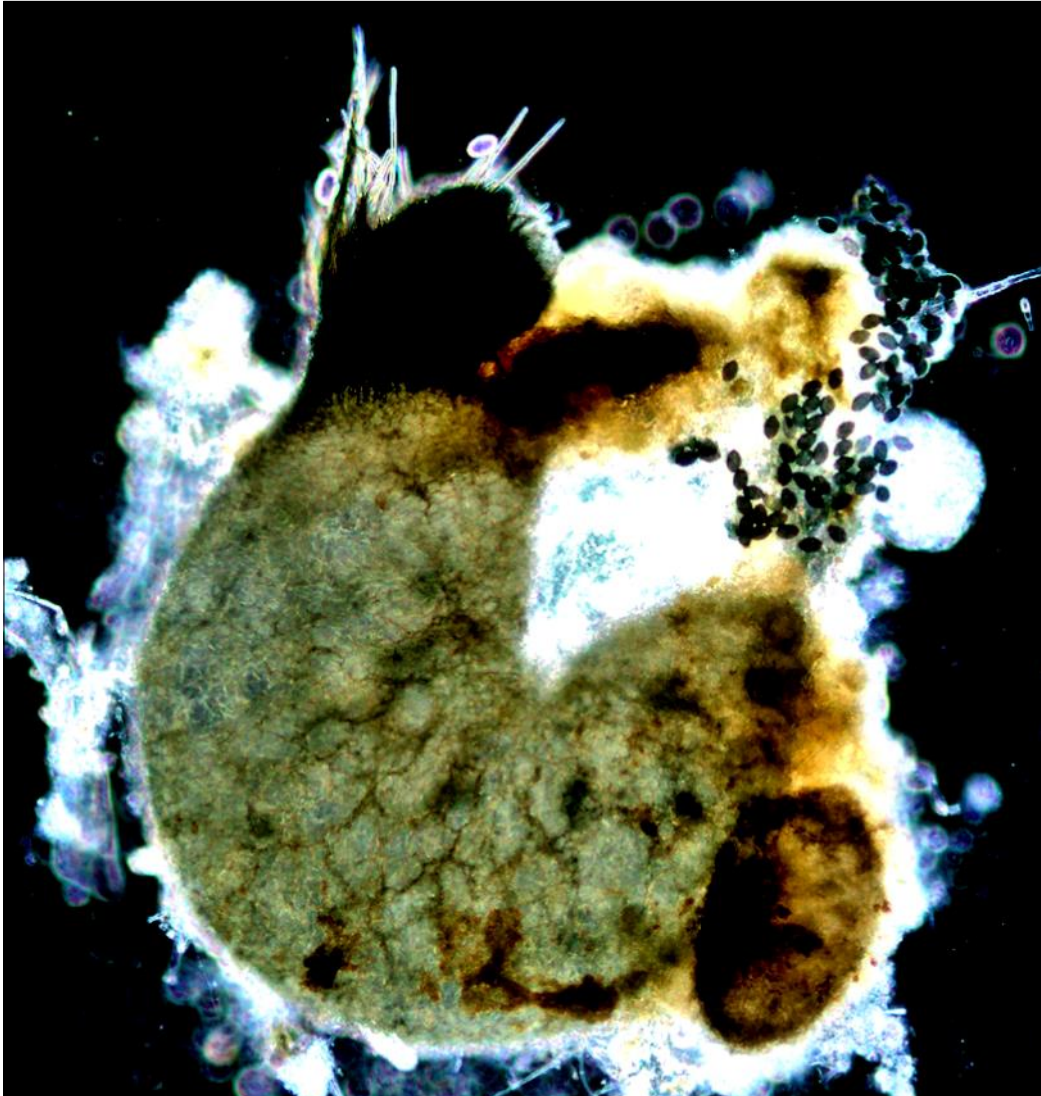
Voucher material: No dried dung specimen. One Shear's mounting fluid (SMF) semi-permanent microscope slide and several digitized photos of microscopic detail using water and SMF mounts.

Brief comments: This 2017 collection is my most recent formal AEB/PDD report of *P. curvicolla*. Since then my collections have been fewer and have concentrated primarily on ascomycetous and hyphomycetous woody decay fungi. However, it offers an opportunity to present photos and some descriptive detail from collections of *P. curvicolla* by Ann Bell and myself in New Zealand since the 1980's. These are represented by slides only but have not been given any AEB or PDD #s. Voucher slides of these are included in the herbarium packet along the the single slide of AEB 1348.

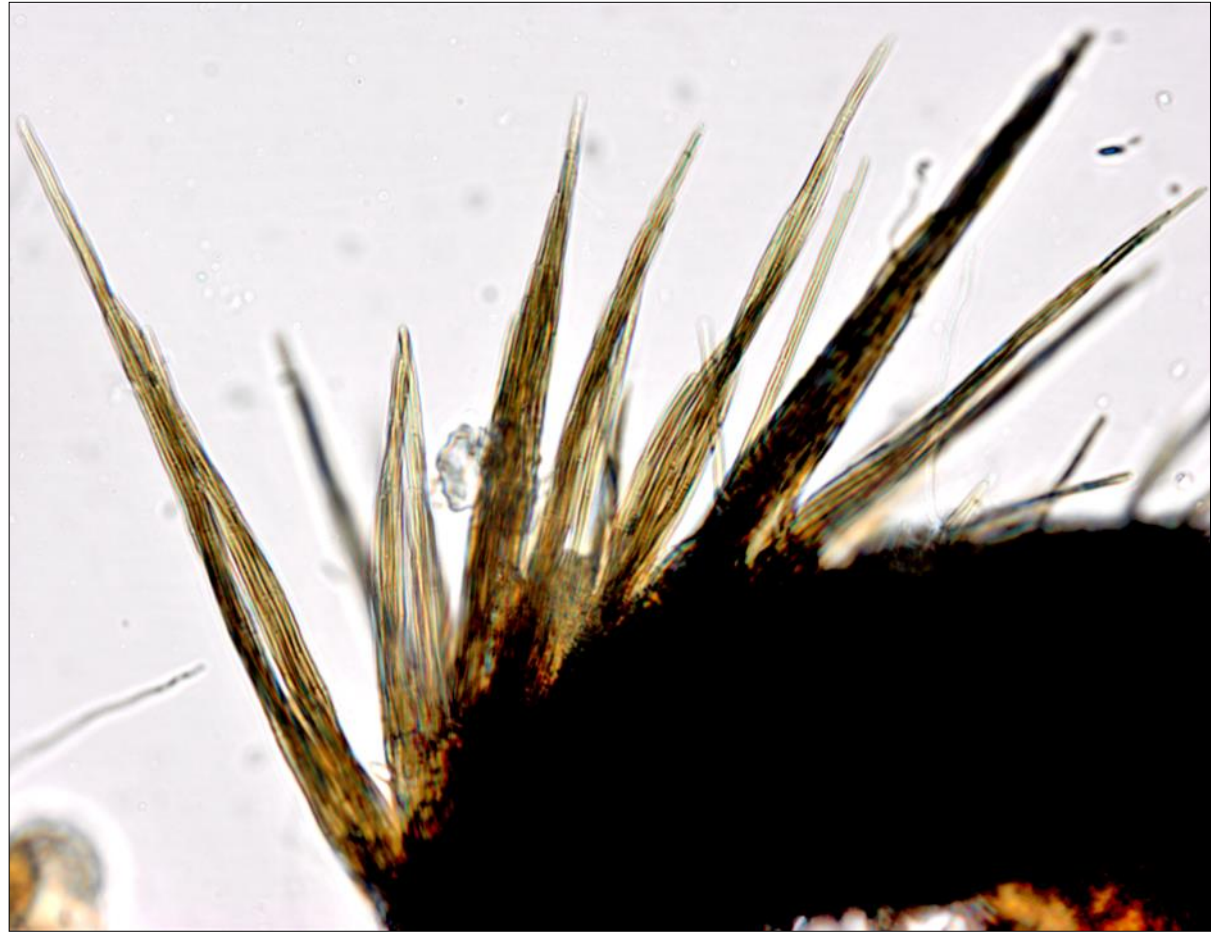
The next 4 pages are devoted to the 2017 collection AEB 1348 (= PDD 120013), the 5th page to details from Nils Lundqvist's 1972 treatment and the rest to those since the 1980's that were given NZ collection numbers but no AEB or PDD #.

AEB 1348. Perithecium
550 × 400 µm with 1 large
multi-spored ascus. Wa-
ter mount using the X20
objective and brightfield
microscopy. Left photo:
focus on the ascus. Right
photo: focus on the tex-
tura angularis peridium.

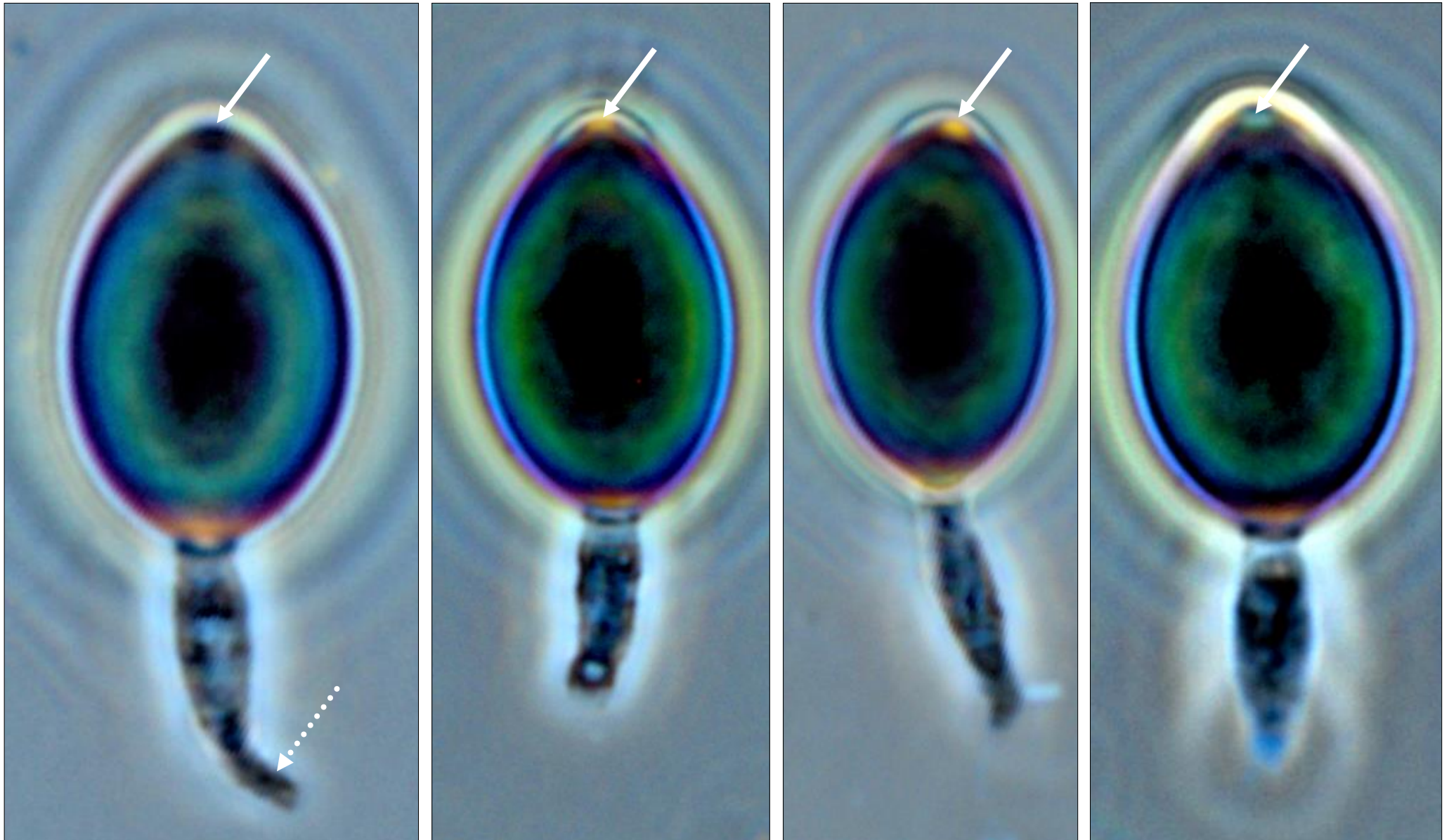




AE 1348. Both photos the same perithecium ($550 \times 400 \mu\text{m}$) in a water mount. Left photo: X10 objective & phase microscopy. Right photo: X20 objective & brightfield microscopy. Emphasis on the *textura angularis* peridium.

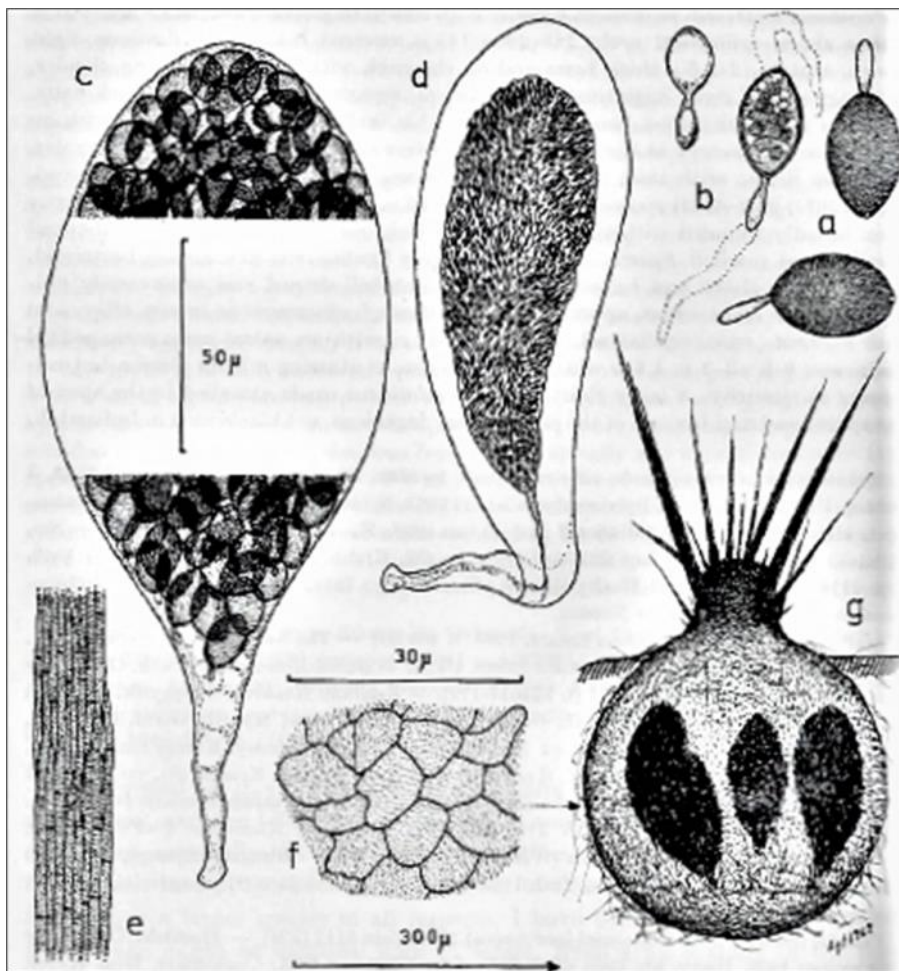


AEB 1348. The same perithecium in both photos, emphasizing the appendages on the long, positively phototropic neck. As Nils Lundqvist (1972) described them, “the tapering tufts of rigid, agglutinated, cylindrical, septate, brown, c. 2.8 μ thick hairs”. Photos are under the X20 objective (left) and X40 obj. (right), from a SMF heated mount using brightfield microscopy.



AEB 1348. Mature ascospores. Water mounts using the X100 objective and phase microscopy. Note the germ pores (solid white arrows) and a fragment of the fugacious basal cauda on the pedicel (dotted white arrow). Fresh ascospores consisted of pigmented spore bodies ($15\text{--}18 \times 10\text{--}11 \mu\text{m}$) with a hyaline basal pedicel ($8\text{--}9 \times 3 \mu\text{m}$), an apical central germ pore on the body cell but often only hints of its fugacious apical cauda which was slightly wider than the fugacious cauda on the pedicel.

***Podospora curvicola* (G. Winter) Niessl – description and illustrations from the publication ‘Lundqvist, N. 1972. Nordic Sordariaceae s. lat. Symb. Bot. Upsal. 20: 1–374.’**



Page 186, Fig. 35. *Podospora curvicola*. a, b, d: J 1664-q (UPS). c, e-g: K. & L. Holm 19.VIII.1968 (UPS). Drawn from specimens in lactophenol, a: Mature spores. b: Immature, hyaline spores at two stages of development. c: Mature ascus and spores. d: Immature ascus with spores at rod-like stage. e: Part of hair fascicle from perithecium. f: Peridium in horizontal view. g: Perithecium.

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Perithecia scattered, immersed, broadly obpyriform to globose, 480-575 x 385-500 μ, with a short, cylindrical neck, 145-280 x 145 μ, covered below with flexuous, light brown, septate, 2-2.5 μ thick hairs and on the neck with up to 430 μ a long, slender, tapering tufts of rigid, agglutinated, cylindrical, septate, brown, c. 2.8 μ thick hairs. *Peridium* membranaceous, semi-transparent, thin, yellowish to light brown with an olivaceous tint, except in the black, carbonaceous neck; outer peridial cells angular, 5-11 μ in diam., with thin, straight or undulating walls. *Paraphyses* not observed. *Asci* (128?–) 256-512?-spored, 200-335 x 60-120 μ, clavate to saccate, short-stipitate; apex broadly rounded without apical ring or light-refractive membranes; subapical chamber not marked. *Spores* multiseriate, at first hyaline, rod-like, almost bacterioid, then swelling above and below becoming ±dumb-bell-shaped and transversely uniseptate at the constriction; upper cell ranging through olivaceous to brown, ellipsoidal with subacute ends, equilateral, 14.5-17 × 9-11 μ, with an apical germ pore; pedicel obclavate, 6-8 x 2-3 μ, 1.5 μ wide at the septum, containing a little plasma but collapsing at maturity. A fairly short, lash-like *gelatinous cauda* attached to the apex of the spore head and the end of the pedicel, very fugacious, not blackening in Indian ink.

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The characteristics of *P. curvicola* are the long, pointed hair tufts, saccate asci without apical ring, small spores, and fugacious caudae. The latter are visible in immature spores only.

Below are presented details of *Podospora curvicolla* NZ collections since the 1980's (in chronological order) for which only slides were kept and these given only a NZ collection # but no formal AEB or PDD #s. These slides are included in the herbarium packet for AEB 1348.

Dung collection number NZ19: rabbit dung, coll. 10 Sept. 1987 near Christchurch, coll. John Parkes, I.D. Dan Mahoney & Ann Bell, voucher 1 lactophenol slide rejuvenated with Shear's mounting fluid.

Dung collection number NZ115: rabbit dung, coll. 6 Nov. 1987 near Waipara, coll. Don Robson, I.D. Dan Mahoney & Ann Bell, voucher 2 lactophenol slides rejuvenated with Shear's mounting fluid.

Dung collection number NZ120: goat dung, coll. 4 Jan. 1988, Kaiteriteri Health Farm, coll. & I.D. by Dan Mahoney & Ann Bell, voucher 1 lactophenol slide rejuvenated with Shear's mounting fluid. Unfortunately, while attempting to clean and seal the coverslip, it moved and the slide is no longer worth keeping so only the record and photos in 1988 & 2022 represent it (the slide was discarded).

Dung collection number NZ161: rabbit dung, coll. 15 Aug. 1988 at Hokio Beach, coll. & I.D. by Dan Mahoney & Ann Bell, voucher 1 lactophenol slide.

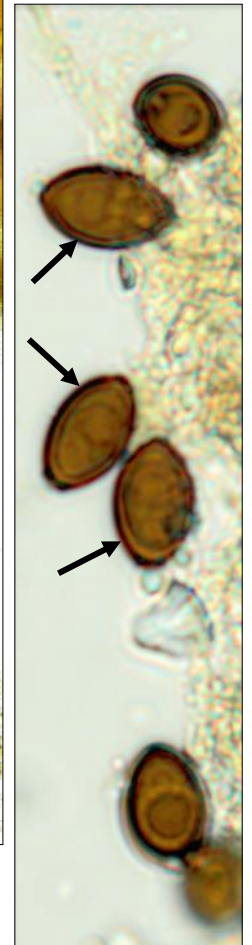
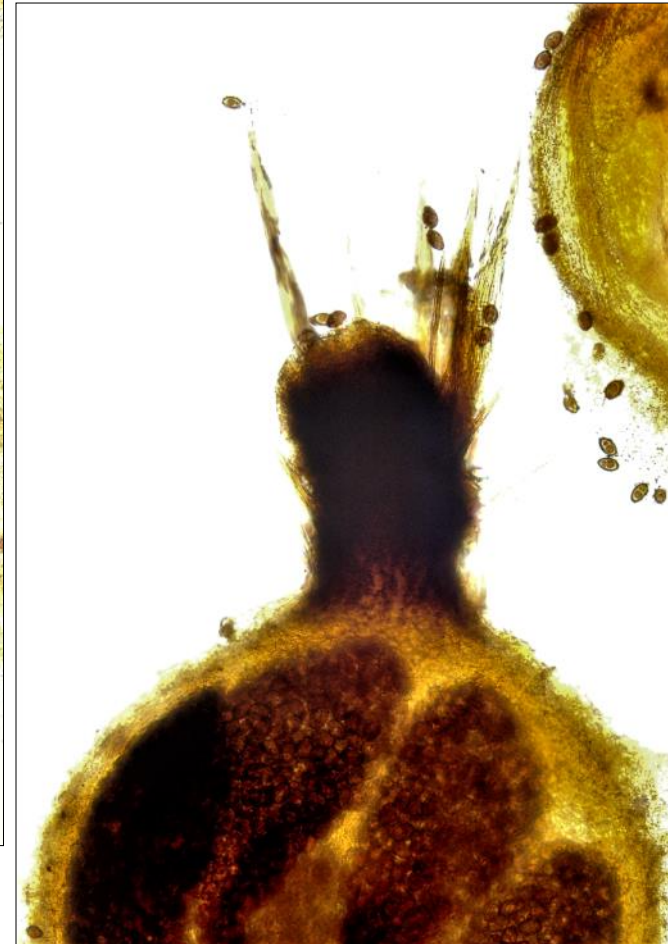
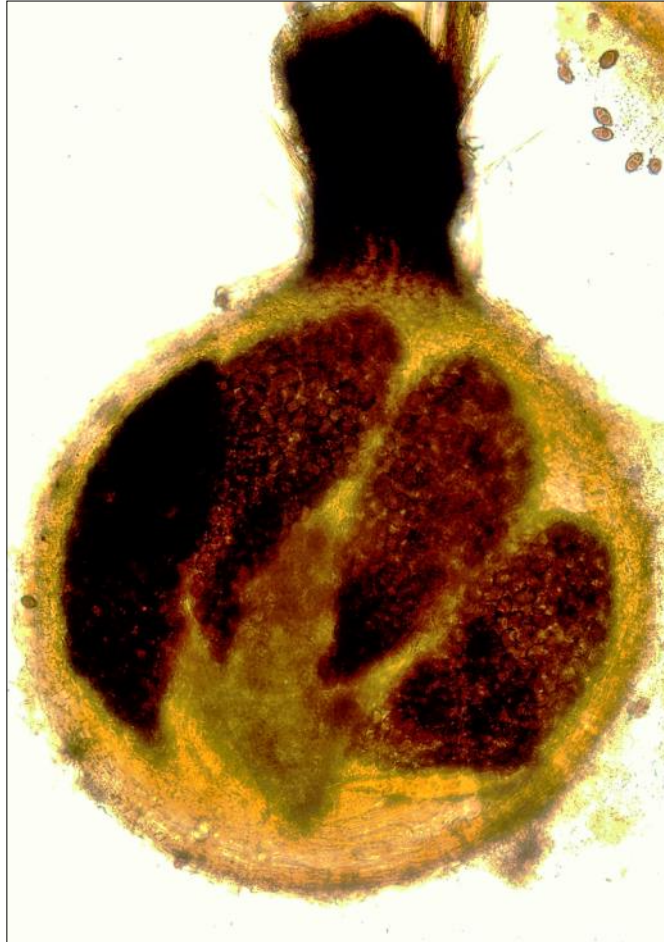
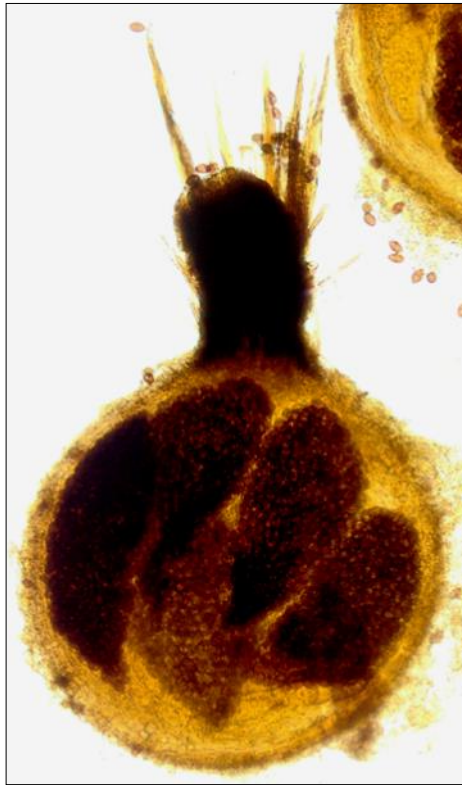
Dung collection number NZ184: rabbit dung, coll. 24 Feb. 1990 at Mount Taranaki, coll. & I.D. by Dan Mahoney & Ann Bell, voucher 2 lactophenol slides rejuvenated with Shear's mounting fluid.

Dung collection number NZ188: rabbit dung, coll. March 1990 at Matata (on grassy dune area near ocean), coll. Harold Keena, I.D. Dan Mahoney & Ann Bell, voucher 1 lactophenol slide rejuvenated with Shear's mounting fluid.

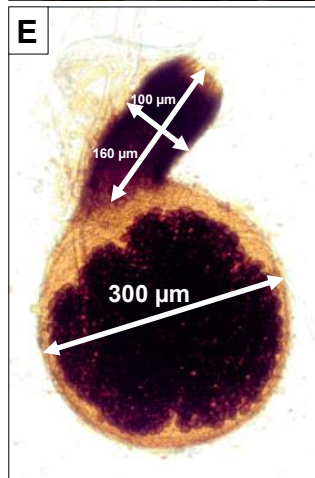
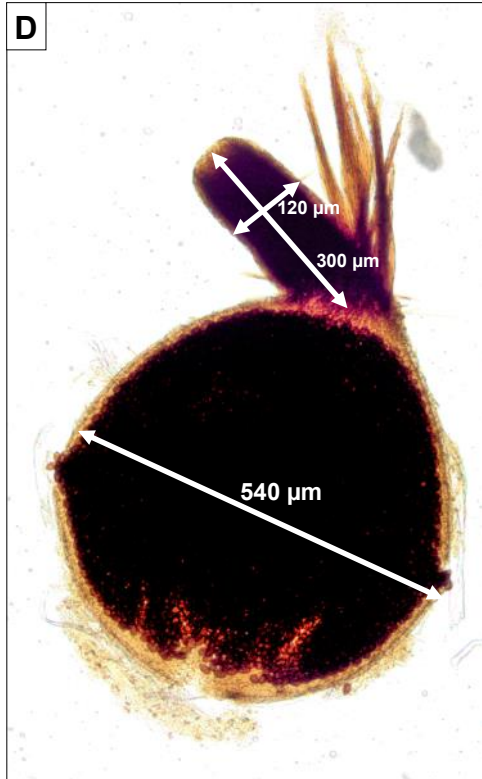
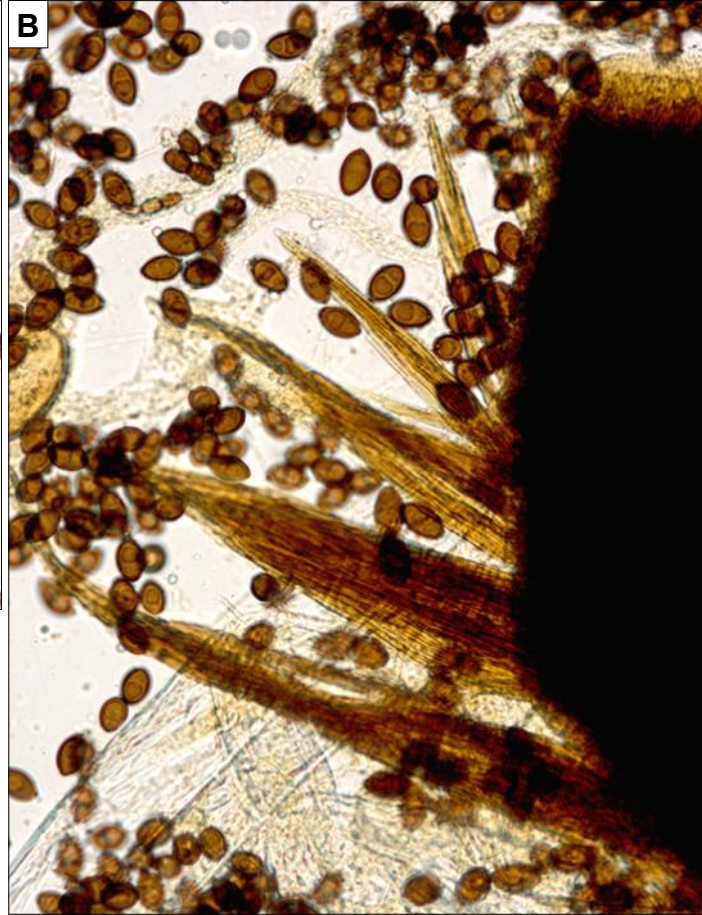
Dung collection number NZ208: horse dung, coll. 6 Feb. 1991 at Hokianga harbour inlet, coll. & I.D. by Dan Mahoney & Ann Bell, voucher 1 lactophenol slide rejuvenated with Shear's mounting fluid in 2022.

Dung collection number NZ215: rabbit dung, collected 14 July 1991 in the Wairarapa (Riversdale Beach), collected by Kylie Cloade, identified by Ann Bell & Dan Mahoney, voucher 1 slide rejuvenated with Shear's mounting fluid in 2022.

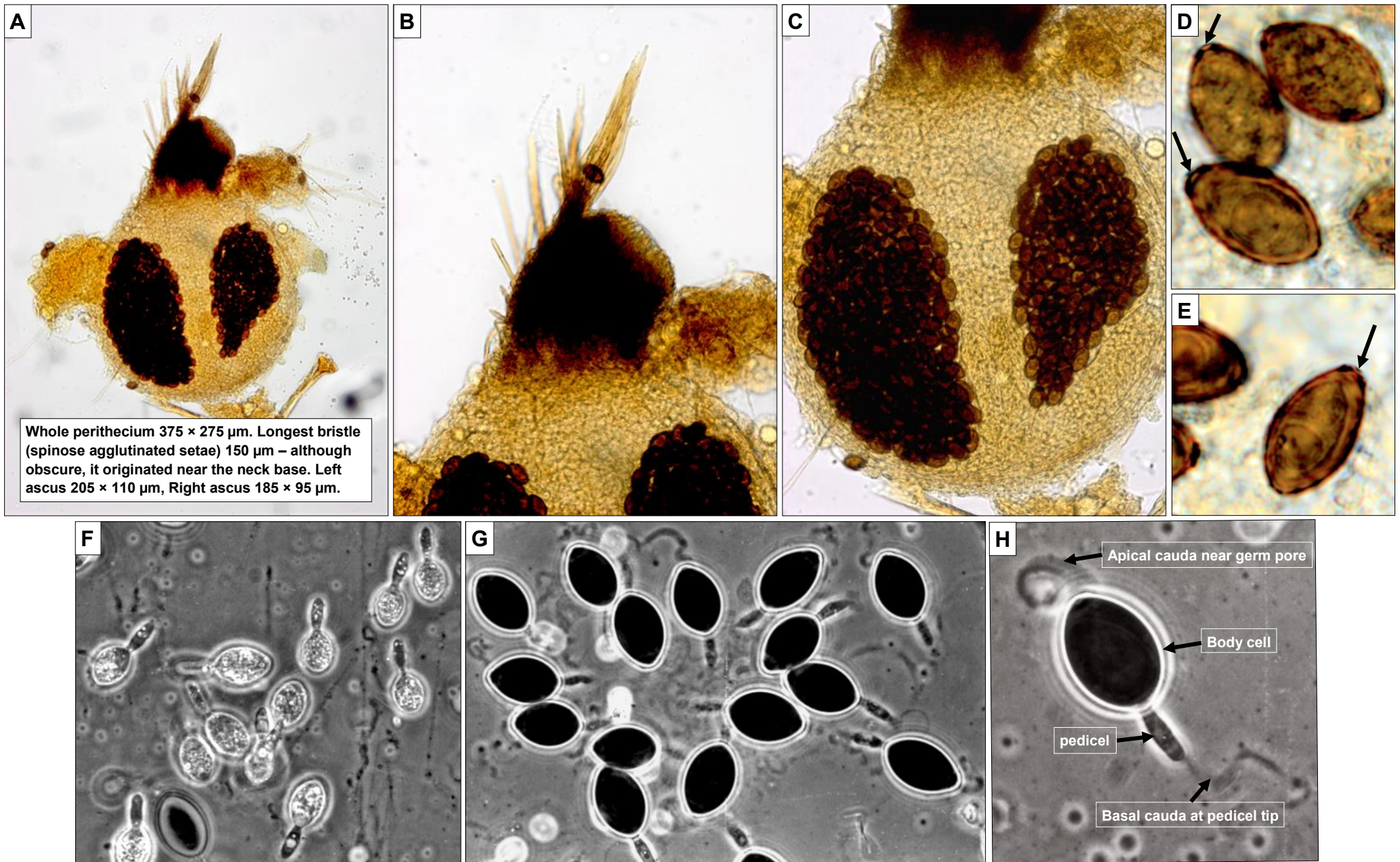
Dung collection number NZ240: rabbit dung, collected 26 Feb. 1992 at Hokio Beach, collected and identified by Dan Mahoney & Ann Bell, voucher 2 lactophenol slides rejuvenated with Shear's mounting fluid in 2022.



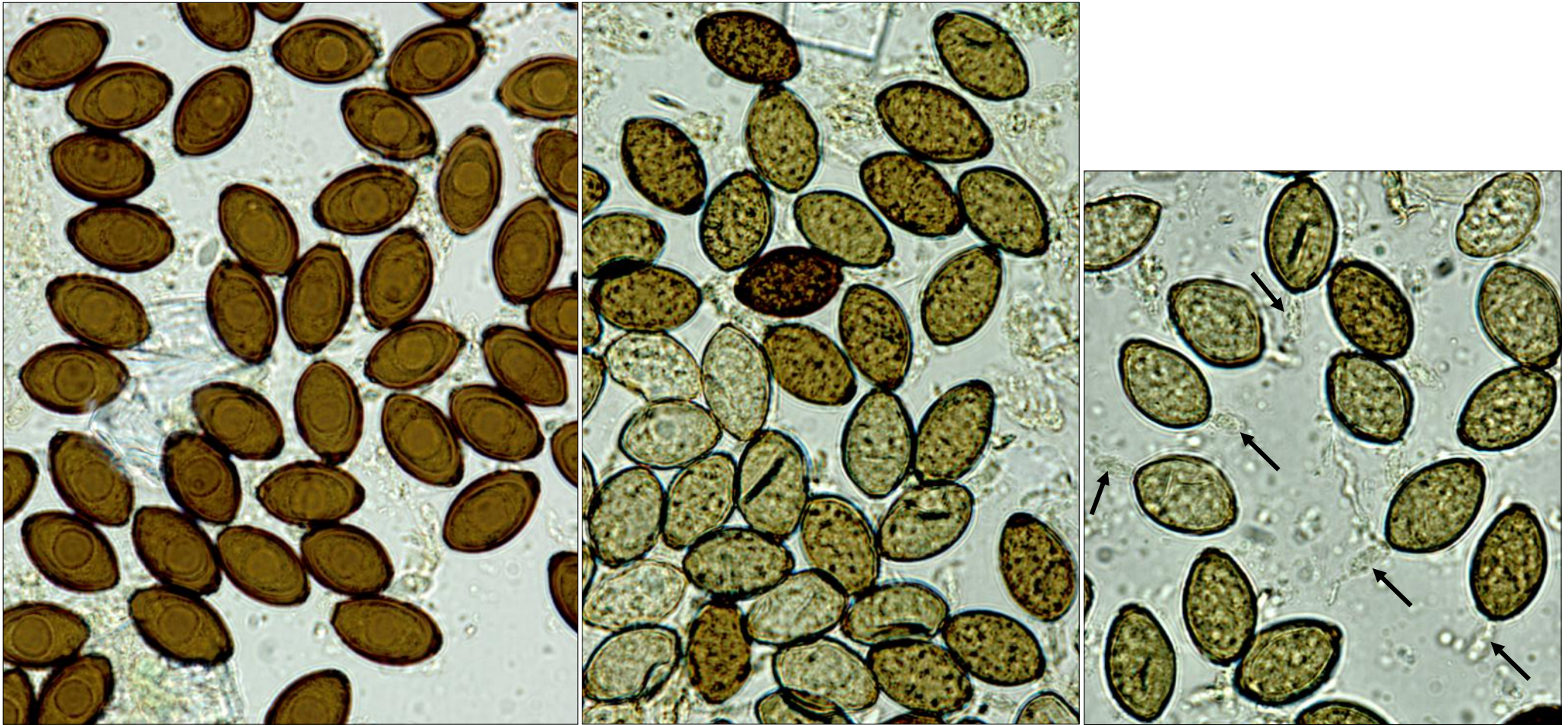
NZ19. All photos from an original lactophenol slide prepared from fresh incubated dung in 1987 and rejuvenated with Shear's mounting fluid in 2022. Same perithecium and free ascospores: left photo X10 objective (perithecium $650 \times 450 \mu\text{m}$ including neck, neck portion $200 \times 120 \mu\text{m}$), middle 2 photos X20 obj., right photo free ascospore body cells X40 obj. enlarged (those arrowed, $18 \times 10 \mu\text{m}$).



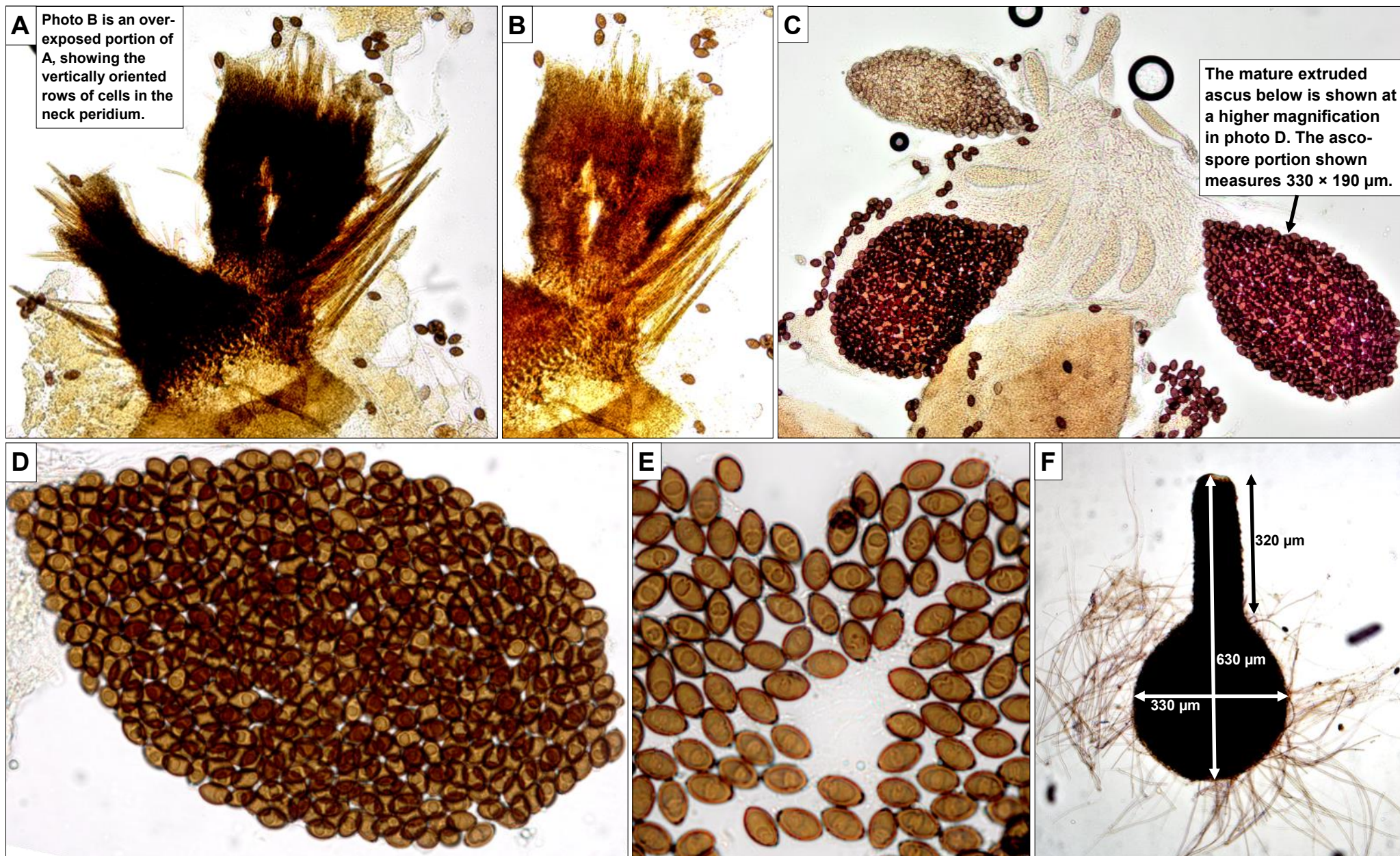
NZ115. Photos from 2 original lactophenol slides prepared from fresh incubated dung in 1987 and rejuvenated with Shear's mounting fluid in 2022. A–C. Slide emphasizing a perithecium with features often typical of the species (phototropic neck with one-sided bristles in A&B) and body cells (15–18 × 10–11 μm in C). D–E. A second slide emphasizing variability in perithecial size, number of asci and number of bristles.



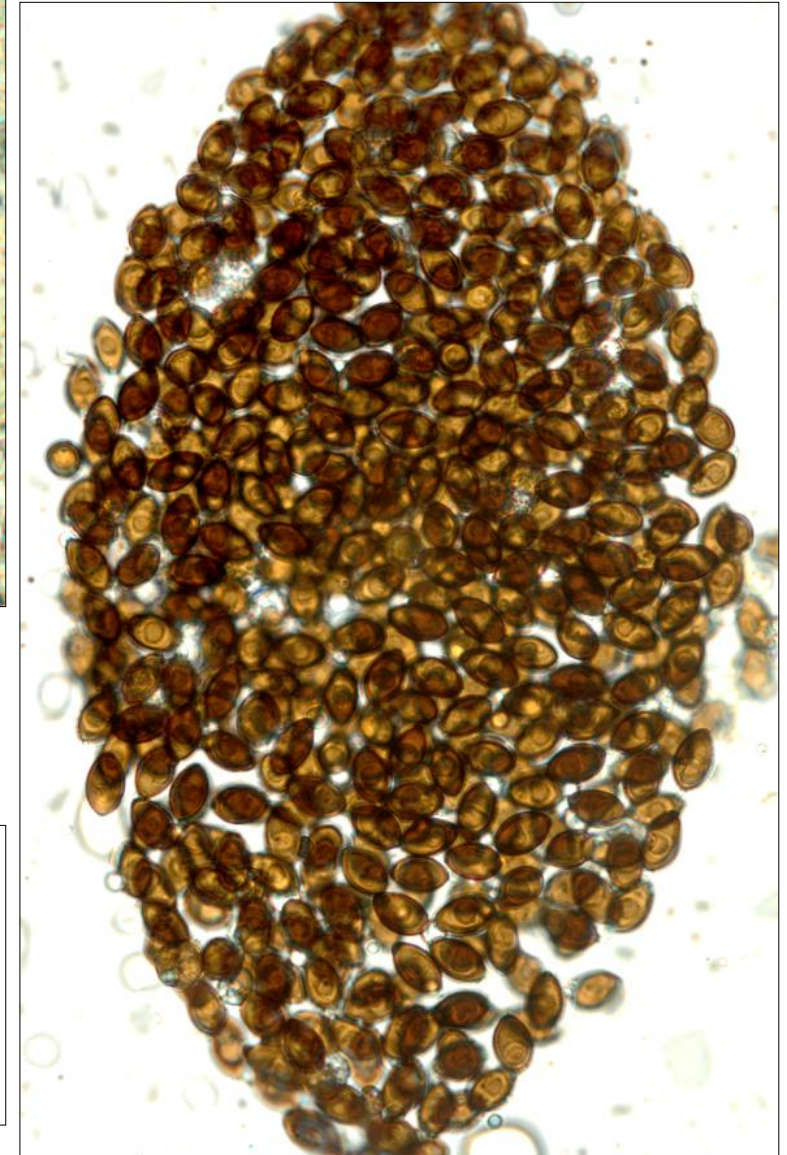
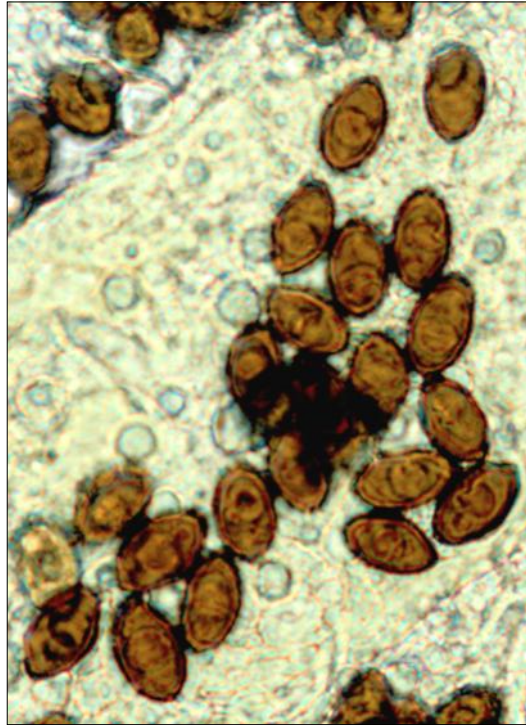
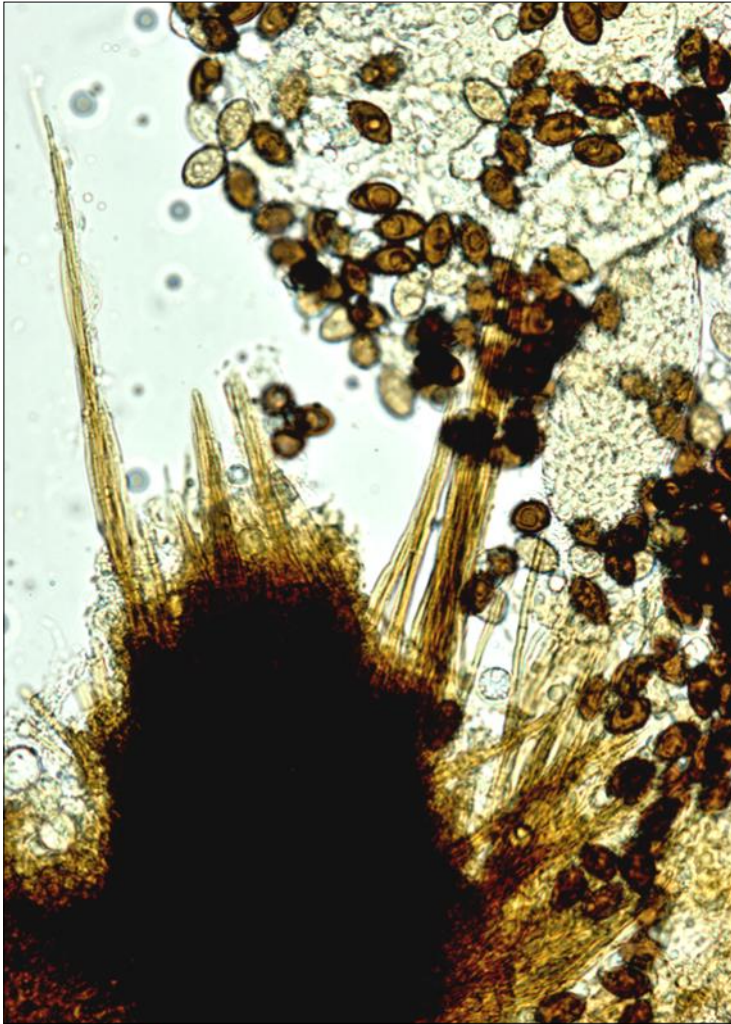
NZ120. A–E. Photos from an original lactophenol slide prepared from fresh incubated dung in 1988 and rejuvenated with Shear's mounting fluid in 2022. **D–E.** Ascospore body cells 15–18 × 10–11 µm. Germ pores arrowed. **F–H.** B&W photos from fresh ascospore water mounts in 1988. **F.** immature ascospores. **G–H.** Mature ascospores.



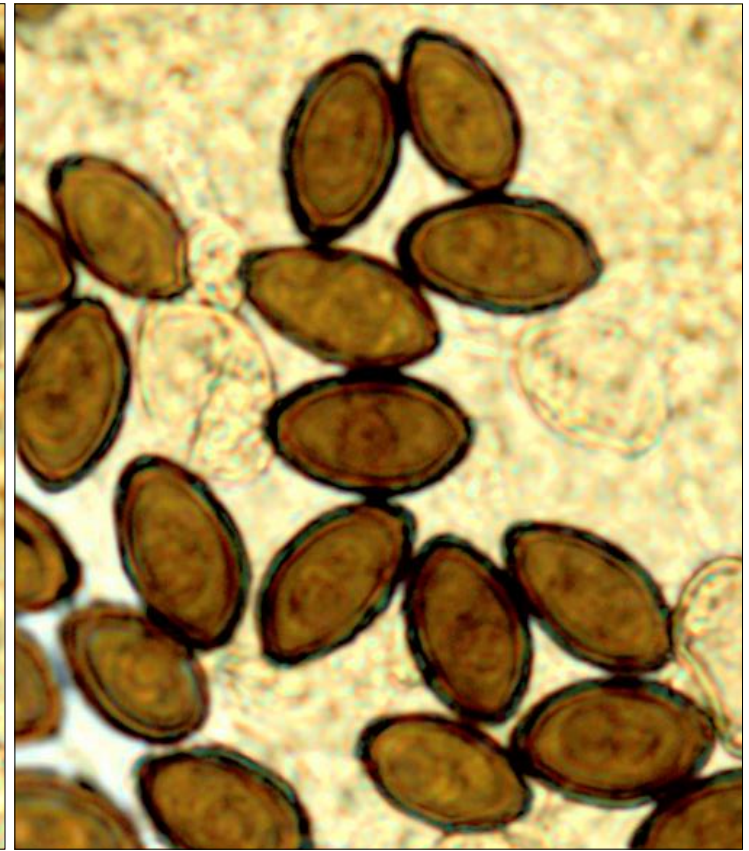
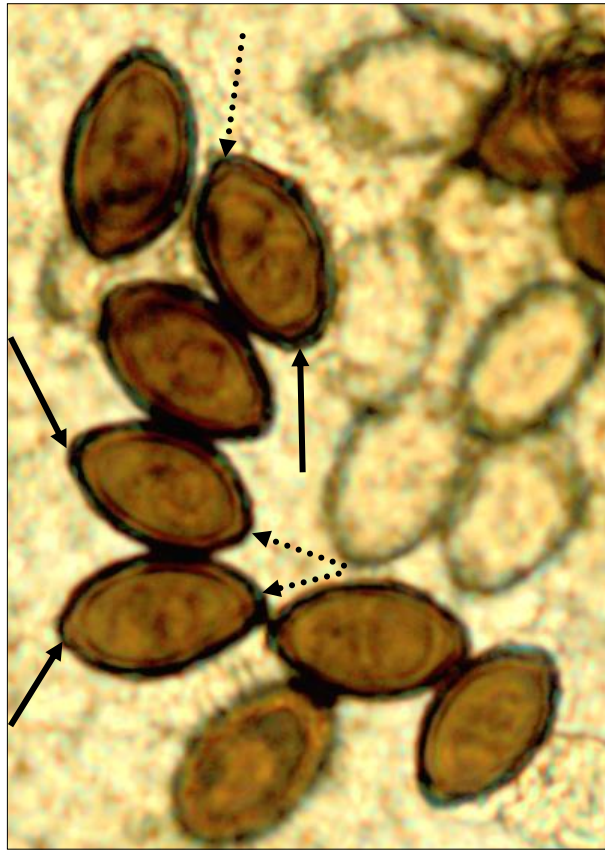
NZ161. Photos in 2022 from an original lactophenol slide prepared from fresh incubated dung in 1988. All photos taken using the X100 objective and brightfield microscopy. Left: fully mature body cells (those shown were $17\text{--}19 \times 11\text{--}12 \mu\text{m}$. Middle: mixture of young (lighter) and more mature (darker) body cells. Right: Less mature body cells; some with basal pedicels (arrowed).



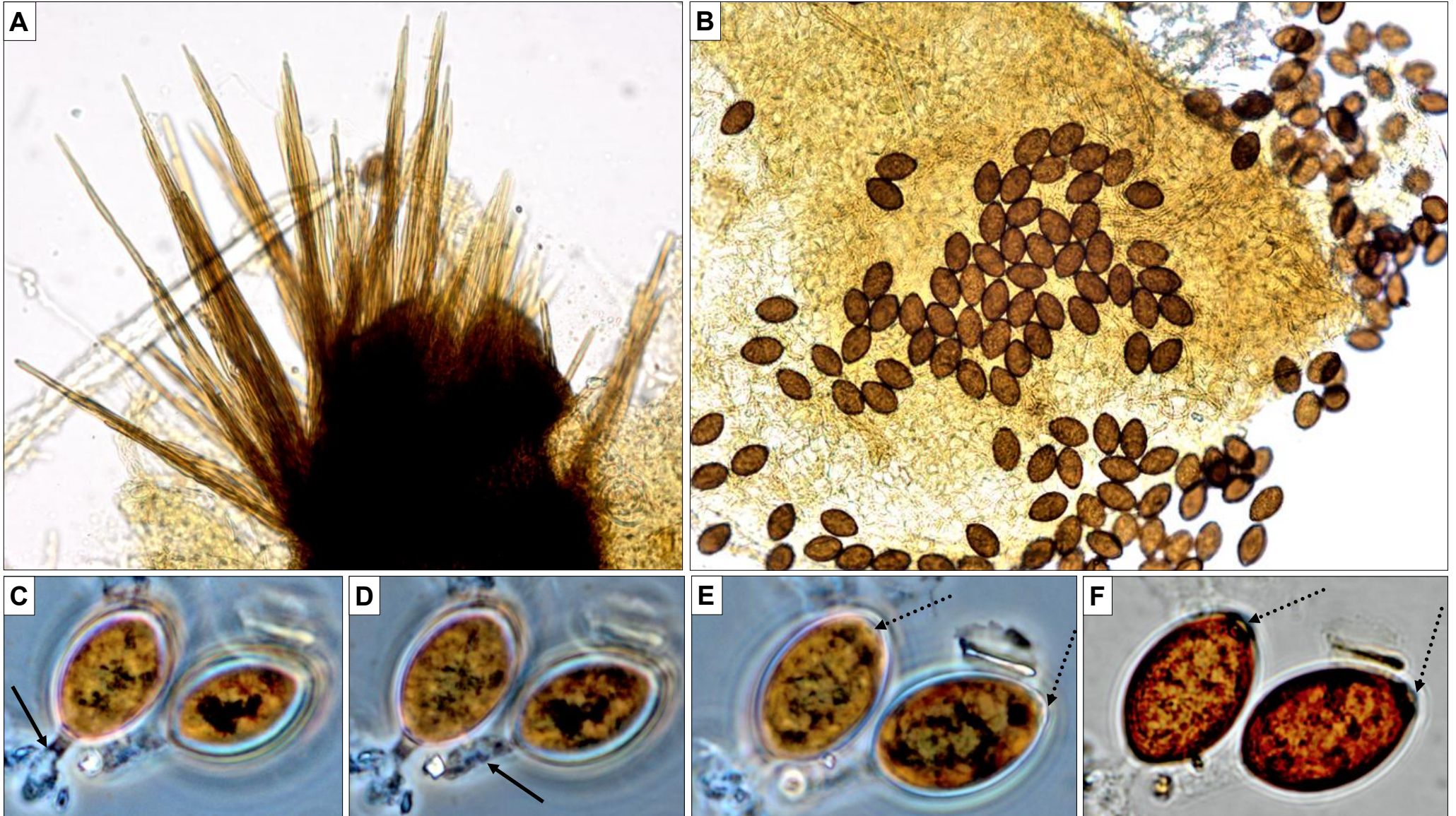
NZ184. A–E. Photos from 2 original lactophenol slides rejuvenated with Shear's mounting fluid (SMF) in 2022. **A–B.** Squashed neck area of perithecial from which asci in C&D were extruded. **E.** Free ascospore body cells $15\text{--}18 \times 11\text{--}12 \mu\text{m}$. **F.** Slide from a CMA axenic culture in January 1992, showing a long-necked perithecial free of neck bristles.



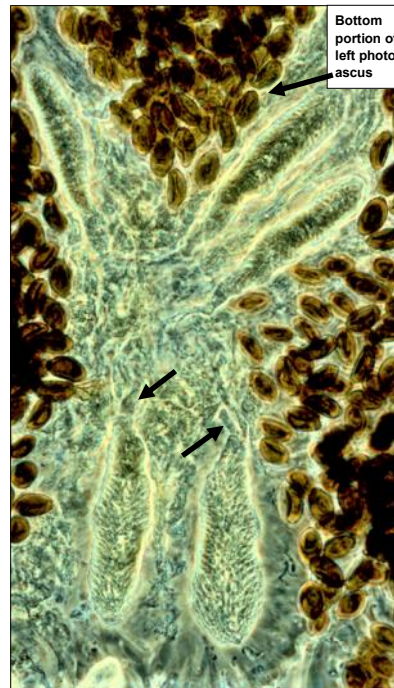
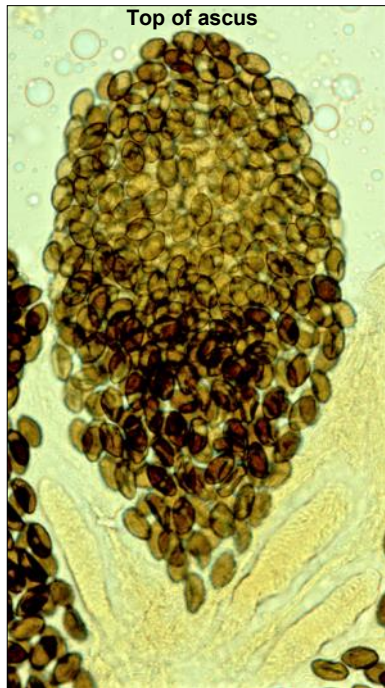
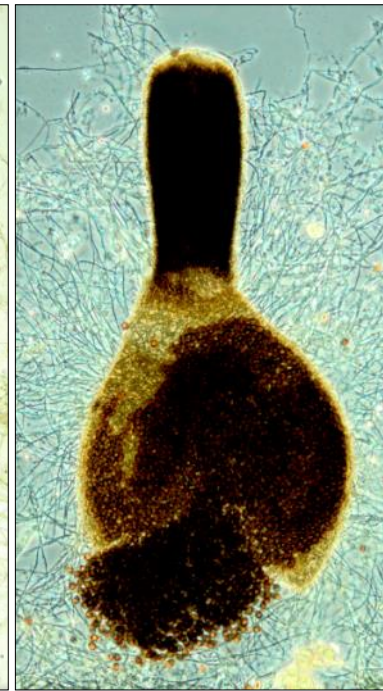
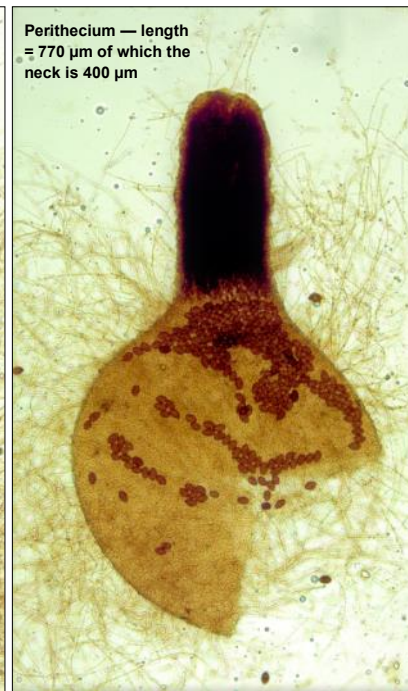
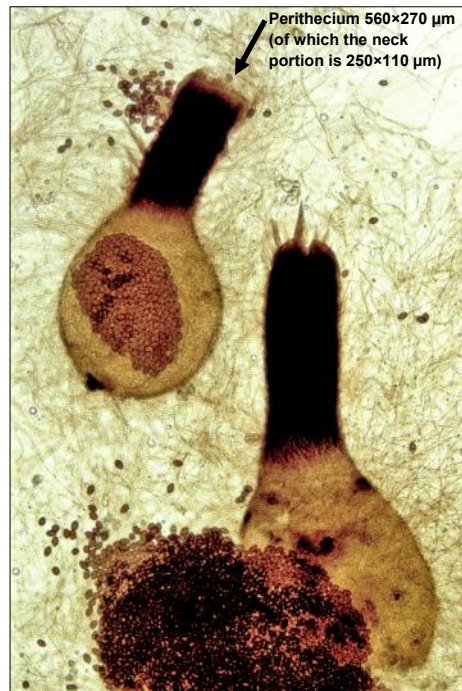
NZ188. The lactophenol slide, prepared from *P. curvicolla* on incubated rabbit dung (Matata, 1990) was rejuvenated in 2022 with SMF. Left photo: X20 objective, emphasis perithecial neck bristles & spore body cells. Center photo: X40 obj., body cells (15–19 × 11–12 μm). Right photo: X40 obj., ascus with more tapered base at the photo bottom – ascospore portion minus the seldom-seen stalk (360 × 200 μm).



NZ208. The lactophenol slide, prepared from fresh *P. curvicolla* on incubated horse dung (Hokianga harbour inlet, 1991) was rejuvenated in 2022 with Shear's mounting fluid. All photos seen here were from that SMF. Upper left photo: perithecium with agglutinated setae on the neck & scattered ascospore body cells. Upper right 2 photos: body cells from perithecium peridium surface, X40 objective enlarged. Bottom photo: cluster of discharged body cells, X40 obj. Body cells mostly $16\text{--}19 \times 10\text{--}12 \mu\text{m}$. Dependent on the squashed-orientation of the body cell (and magnification), the point of pedicel attachment is on the more broadly rounded and truncate basal end of the body cell (solid arrows) while the germ pore is at the slightly narrower and darker body cell apex (dotted arrows). Pedicels (and especially caudae) are fugacious with only a few pedicels seen in the slide mount.



NZ215. A–F. Photos from the original 1991 slide rejuvenated with Shear’s mounting fluid (SMF) in 2022. A–B. X40 objective: A. Perithecial neck with numerous setose agglutinated bristles. B. Perithecium peridial fragment with ascospore body cells. C–F. X100 objective (C–E phase, F brightfield; E–F same focus): All the same 2 body cells ($18 \times 12 \mu\text{m}$) shown to emphasize the pedicels and germ pores (pedicels solid arrows, germ pores dotted arrows). Note the characteristic body cell shape with broader basal end (pedicel attachment point) and narrower apex (germ pore end) and also the black area of the spore wall that surrounds the germ pores in F.



NZ240. All photos from two 1992 lacto-phenol slides rejuvenated in 2022 with Shear's mounting fluid. Top row: Perithecia from a 36-day-old axenic CMA culture. Venter portions were within the agar and the longish necks partially emergent. Note that setose agglutinated bristles on the neck are few or absent. Bottom row: From the 1992 incubated dung where necks were short & bristled. Left photo a saccate ascus 265 × 135 μm (ascospore body cells within are 15–19 × 10–12 μm). Right photo with young asci showing an early stage of ascospore development. Note the short stalks on the developing asci (arrowed).