

***Erioscyphella abnormis* (Mont.) Baral, Šandová & B. Perić 2015 AEB 1343 (= PDD 117260) – a good fit**

Collection site: Lower Hutt, Kelson, residential bush area

Substrate: dead 4 cm diameter downed branch with bark still intact

Collection date: 24 September 2021; **Collector & identifier:** Dan Mahoney

Voucher material: dried herbarium material [AEB 1343 (= PDD 117260)] accompanied by several semi-permanent slides; Dan's in-situ photos of apothecia and his compound-scope photos from semi-permanent microscope slide mounts; Dan's comments and his illustration descriptions.

Dan's comments: This reasonably common species has several synonyms and has undergone a number of name changes. Thirty-nine collections are recorded in New Zealand's Landcare Research PDD website. Below are listed some prominent references in its nomenclatural history.

- 1) Dennis RWG. 1961. Some Inoperculate Discomycetes from New Zealand. Kew Bulletin. 15(2): 293–320. *Dasyscyphus cassandrae* sensu Dennis is now considered a synonym of *Erioscyphella abnormis*.
- 2) Haines J.H., Dumont K.P. 1984. Studies in the Hyaloscyphaceae III: The long-spored, lignicolous species of *Lachnum*. Mycotaxon 19: 1–39. “The tropical, long-spored, lignicolous species of *Lachnum* (*Dasyscyphus*, *Erinella*) are revised. Nine taxa are described from type material and a key is provided. Sixteen additional types of species treated as synonyms were examined. More than 400 collections, many of which were made by the authors, were examined. The genera *Erinella* and *Erioscyphella* are lectotypified and *Dasyscyphella*, *Erioscypha*, and *Erinellina* are discussed.” Taxonomic history is reviewed as is morphological variation – especially for *Lachnum abnorme* (which later became *Erioscyphella abnormis*). Their description & illustrations for *L. abnorme* are reproduced on a following page.
- 3) Spooner BM. 1987. Helotiales of Australasia: *Geoglossaceae*, *Orbiliaceae*, *Sclerotiniaceae*, *Hyaloscyphaceae*. Bibliotheca Mycologica 116: 1–711. Spooner's description & illustrations are reproduced on a following page. Three of the six collections he examined were from New Zealand and his illustrations are based on a NZ collection (PDD 19033). Among his comments on p. 556 he states “The full synonymy for this common and widely distributed species was established by Haines & Dumont (1984), who examined and reported a large number of collections, including material from Australia, New Zealand and Papua New Guinea. *Lachnum abnormis* was previously reported from New Zealand as *Dasyscypha corticola* by Dennis (1961), and the collection referred by him to *Dasyscyphus cassandrae* is also included here under this species.”

4) Perić B, Baral H-O. 2014. *Erioscyphella curvispora* spec. nov. from Montenegro. *Mycologia Montenegrina* 17, 89–104. “Based on morphological and molecular similarities (they) propose (several) new combinations”: Among these is the following: “***Erioscyphella abnormis*** (Mont.) Baral, Šandová & Perić, **comb. nov.** Basionym: *Peziza abnormis* Mont., *Annls Sci. Nat., Bot., sér. 23*: 351 (1835) **MycoBank**: MB812341.” (For further synonyms see Index Fungorum below)

5) Ekanayaka AH, Hyde KD, Gentekaki E, McKenzie EHC, Zhao Q, Bulgakov TS & Camporesi E. 2019. Preliminary classification of Leotiomyces. *Mycosphere* 10(1), 310–489. The Ekanayaka et al. 2019 description & illustrations are reproduced on a following page.

6) Jae-Gu Han, Gi-Hong An, Jong Won Jo, Chang Sun Kim, Jae-Han Cho, Kang-Hyo Lee & Ok-Tae Kim. 2021. *Erioscyphella abnormis* (Lachnaceae: Ascomycota), an unrecorded species in Korea. *Journal of Asia-Pacific Biodiversity* (Short communication – 5 pages) The Jae-Gu et al. 2021 description & illustrations are reproduced on a following page.

Dan’s descriptive comments for AEB 1343: These are provided in the photo legends that accompany his photos. *Erioscyphella abnormis*, long considered a common lignicolous species in the tropics, has also been found in less-than-tropical areas of New Zealand, Japan and South Korea. The photos provided here will hopefully help document its morphological variations in New Zealand.

Index Fungorum (October 2021):

Current Name:

[Erioscyphella abnormis \(Mont.\) Baral, Šandová & B. Perić](#), in Peric & Baral, *Mycologia Montenegrina* 17: 103 (2015)

Synonymy:

[Peziza abnormis Mont.](#), *Annls Sci. Nat., Bot., sér. 23*: 351 (1835)

[Trichopeziza abnormis \(Mont.\) Sacc.](#), *Syll. fung.* (Abellini) 8: 429 (1889)

[Dasyscyphus abnormis \(Mont.\) Dennis](#), *Kew Bull.* 17(2): 320 (1963)

[Lachnum abnorme \(Mont.\) J.H. Haines & Dumont \[as 'abnormis'\]](#), *Mycotaxon* 19: 10 (1984)

[Dasyscyphus cassandrae sensu Dennis](#); fide NZfungi (2008)

[Lachnum longisporum P. Karst.](#), *Hedwigia* 28: 191 (1889)

[Erinella longispora \(P. Karst.\) Sacc.](#), *Syll. fung.* (Abellini) 8: 507 (1889)

[Erioscyphella longispora \(P. Karst.\) Kirschst.](#), *Annls mycol.* 36(5/6): 384 (1938)

[Erinellina longispora \(P. Karst.\) Seaver](#), *North American Cup-fungi*, (Inoperculates) (New York): 293 (1951)

[Erinella longispora var. lurida Starbäck](#), *Bih. K. svenska VetenskAkad. Handl.*, Afd. 3 25(no. 1): 7 (1899)

[Lachnum abnorme var. sinotropicum Z.H. Yu & W.Y. Zhuang](#), *Nova Hedwigia* 74(3-4): 416 (2002)

Haines J.H., Dumont K.P. 1984. Studies in the Hyaloscyphaceae III: The long-spored, lignicolous species of *Lachnum*. Mycotaxon 19: 1–39. (portions of pages 10–12, 14–15 & 24 are reproduced below & on the next page)

Lachnum abnormis (Mont.) Haines & Dumont, comb. nov. Fig. 3a.

Apothecia scattered to crowded on bark or wood, globose when young, opening to goblet-shape and finally planate at maturity, 0.5-2.5(-3.5) mm diam, externally covered with pale buff to sienna hairs on the underside and pale buff to white hairs at the margin, when hairs abraiding away then causing the apothecium to appear lighter colored, usually without crystalline or resin-like formations on the tips of the hairs, rarely with red water-soluble formations easily observed with a dissecting microscope, stipitate. Stipe variable, measuring from a narrow peg-like process to a stout cylinder as long as the disc is wide, often with a naked, brown-black base, firmly attached, leaving a short stump when broken off. Disc (hymenium) obscured by the in-folded margins of the cup when young, increasingly exposed with maturity, remaining exposed when dried, regularly circular in outline, buff to orange, generally pale luteus, changing little on drying, without color change or conspicuous pigment release in 3% KOH.

Hairs to 150 µm long, mostly 35-70 x 2.2-3.7 µm cylindrical with hemispherical tips, slightly irregular in outline, curved or flexuous, septate, forming cells 8-40 µm long, but varying greatly in a single apothecium, covered externally with minute, tightly-adhering granules up to 0.4 µm diam., walls thin, to 0.6 µm wide, hyaline to ochraceous with transmitted light, always some hairs with pigmented walls and sometimes pigmented contents, often more lightly pigmented or hyaline toward the tips, arising at an angle from the outer-most excipular cells. Marginal hairs often hyaline and longer than the excipular hairs. Sterile tissue composed of several differentiated regions: the innermost or medullary excipulum of very loosely woven, highly branched, hyaline textura intricata composed of thick-walled, long-celled hyphae 1-2 µm diam; the subhymenium, between the hymenium and medullary excipulum, a layer of compact textura composed of thin-walled, short-celled hyphae with indistinctly formed croziers; in the middle the subhymenium grading into the cortex of the stipe and composed of very tightly packed, unbranched, very long-celled hyphae ca 1 µm diam and giving a braided appearance due to the interweaving of many stranded bundles; the ectal excipulum: the inner most layer, layer 25-50 µm thick, of loosely packed parallel hyphae with some interwoven strands, the individual hyphae intermediate in size between those of the medullary excipulum and those of the stipe; the middle layer formed from the tips of the inner layer becoming much thicker and closely septate to form a thin layer of short-celled, textura prismatica composed of cells up to 5 x 10 µm, oriented at 45° angle to the surface of the outer ectal excipulum; the cells becoming smaller, more compact and slightly pigmented, forming a thin layer of cuboid-celled textura prismatica to textura angularis giving rise to hairs. The base of the stipe often covered with hyaline walls to give the base a superficial resemblance to members of the Sclerotineaceae.

Asci (77-)85-96(-105) x (5-)7-9 µm, cylindrical with a tapered base, usually without a recognizable crozier, and a hemispherical apex with a distinct apical pore, J+ with or without KOH pretreatment, staining as a short, hollow cylinder, less than 1.2 µm in each dimension, spores formed in the upper third, eventually filling the entire ascus when mature, 8-spored.

Spores (39)45-57(-67) x (1.4-)1.7-1.9(2.2) µm, cylindrical flexuous (vermiform), often in a sigmoid configuration, with a hemispherical apex and tapered base narrowing to about 0.8 µm before rounding off, 0-7 septate, commonly 7-septate at maturity just prior to release from the ascus, often with large refractive bodies prior to germination, hyaline, thin-walled. **Continued on the next page:**

Paraphyses narrowly lanceolate (2.0-)2.3-2.9(-3.2) μm at their widest point about one fourth back from the tip, with blunt apices, exceeding the asci by 8-12 μm , straight, unbranched, hyaline, thin-walled, without conspicuous contents and non-septate in the upper half.

No anamorphic state observed.

HOSTS Most commonly found on wood and bark of trees, rarely on woody vines and large herbaceous stems in tropical forests. It occurs on dead stems of all sizes from 2 mm to large tree boles and has occasionally been collected on living trees.

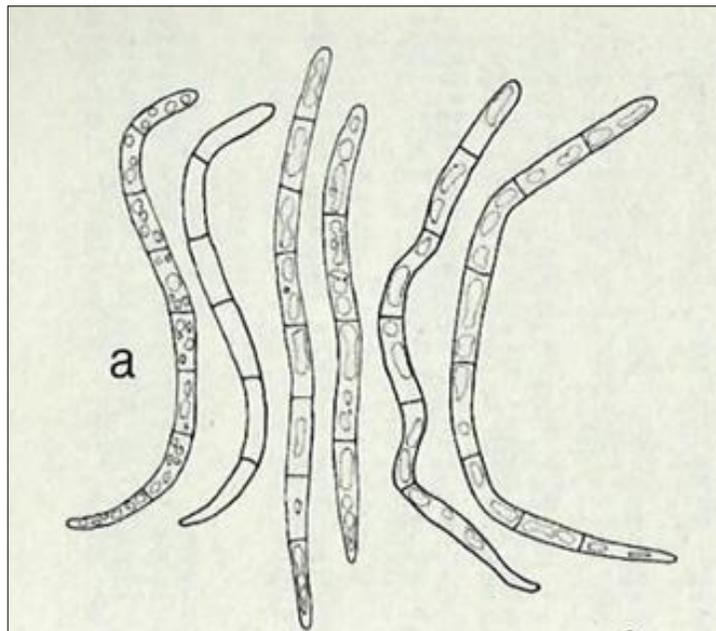
DISCUSSION. -- This is one of the most common inoperculate discomycetes in the tropics. Macroscopically it is easily distinguished from *L. brasiliense*, *L. cyphelloides* and *L. lagerheimii* by producing brown hairs on the underside of the cup. It can often be distinguished from the very similar *L. sclerotii* with a hand lens by the lack of amber-colored resin deposits on the tips of its hairs. It is most common at elevations near 2500 m, whereas *L. sclerotii* is more common near 600 m elevation.

There is considerable color variation among collections of this species. The hairs at the margin of the cup may range from pure white to ochreous (Rayner, 1970), but the stipe and underside of the cup always have some buff to sienna hairs. This color changes little with drying, but becomes lighter in older specimens as the brown hairs are abraded, exposing the lighter-colored excipulum. The base of the stipe in some apothecia is devoid of hairs and is brown-black at the base, but this is not a consistent feature within the species. The most stable character is spore shape. The cylindrical, 3-7 septate, flexuous spores which are tapered at the lower end are found only in this species and the closely related *L. indicum*. This character has not been found in any of the white-haired specimens examined for this study. Paraphysis shape varies some but is always recognizable as "narrowly lanceolate." Some of the variations described from the types of *L. abnormis* synonyms are possibly attributable to different methods of preservation. When the apothecia are rehydrated in 3% KOH and mounted in lactophenol for a week or more, the variation is minimal, and all within the expected range of variation of a single species.

Fig. 3. Ascospores of some tropical, brown-haired *Lachnum* spp.

a. *Lachnum abnormis*

All drawings 1000X.



[Spooner, B.M. \(1987\). Helotiales of Australasia: Geoglossaceae, Orbiliaceae, Sclerotiniaceae, Hyaloscyphaceae. *Bibliotheca Mycologica* 116: 711 p. Portions of pp. 553–555 for *Lachnum abnormis* are reproduced below.](#)

APOTHECIA 1–2 mm diam., scattered to gregarious or clustered, superficial, short-stipitate. **DISC** plano-concave, pale orange when rehydrated, drying darker, smooth, margin incurved when dry. **RECEPTACLE** shallow cupulate or patellate, densely clothed with pale brown or cream-coloured hairs. **STIPE** central, cylindric, short, 100–300 μm high, similarly clothed with hairs or sometimes smooth and brownish at the base. **HAIRS** pale brown or sometimes almost hyaline particularly at the margin, cylindric or slightly tapered at the apex, obtuse, flexuous, thin-walled, multiseptate, finely granulate throughout, 100–160(–180) μm long at the margin, usually shorter on the receptacle, 3–4 μm diam. **ASCI** (95–)100–110(–115) x (9–)10–12 μm , 8-spored, cylindric-clavate, tapered below to a short stipe, apex conical, the pore blue in Melzer's reagent. **ASCOSPORES** (40–)48–60(–64) x 1.5–2.0 μm , hyaline, cylindric, tapered toward the distal end, usually slightly curved or flexuous, becoming 7-septate, usually lying parallel in overlapping fascicles within the ascus, sometimes with a loose spiral arrangement. **PARAPHYSES** narrowly lanceolate, but without an acutely pointed apex, remotely septate, sometimes branched, hyaline, but usually containing a few small guttules, exceeding the asci by up to 20 μm , 3–4 μm diam. **SUBHYMENIUM** a narrow layer of closely woven, thin-walled, septate hyphae. **MEDULLARY EXCIPULUM** composed in the centre of the receptacle of narrow but more loosely woven hyphae; adjacent to the ectal layer forming a zone of parallel, undulating hyphae up to 50 μm thick at the base of the receptacle, originating from the compact, vertically arranged hyphae which form the stipe medulla. **ECTAL EXCIPULUM** composed, at least on the lower receptacle, of hyaline, short-prismatic or cuboidal cells mostly 9–12 x 6–9 μm , often with occluded lumina and appearing thick-walled, becoming more elongated near the margin, and arranged in irregular rows at a low angle to the surface, and giving rise to the hairs. Towards the stipe base, the ectal tissue is less clearly differentiated, composed of smaller, thicker-walled, agglutinated cells.

See Fig. 111

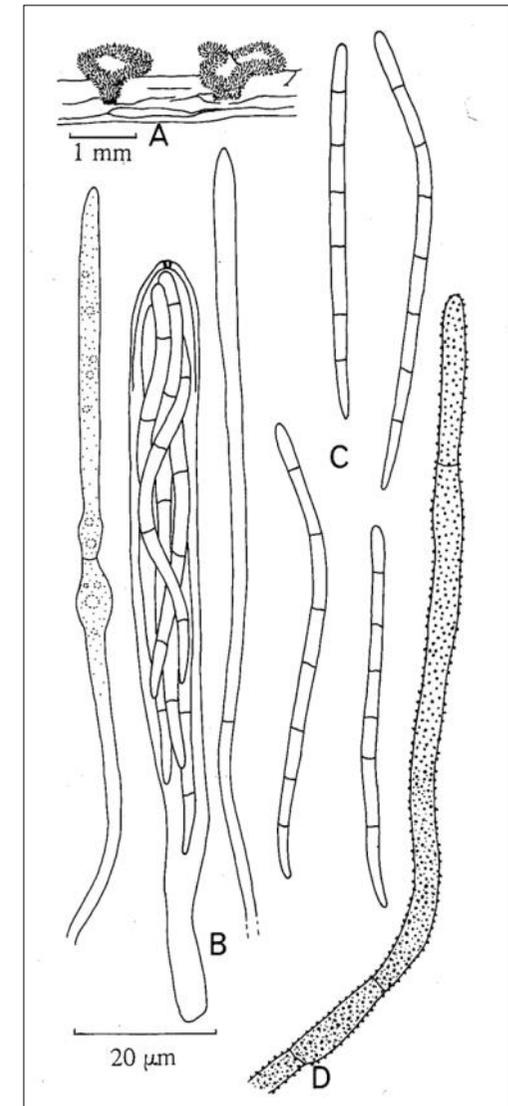


Figure 111. *Lachnum abnormis*. A–D (from PDD 19033). A. Apothecia. B. Ascus and paraphyses. C. Ascospores. D. Hair.

Erioscyphella abnormis (Mont.) Baral, Šandová & B. Perić
= *Lachnum abnorme* (Mont.) J.H. Haines & Dumont
Facesoffungi number: FoF 05911; Fig. 42.

Saprobic on dead stems. **Sexual morph:** *Apothecia* 1–2.5 × 0.5–1.3 mm, arising singly, stipitate. *Receptacle* cupulate, brownish yellow, covered with hairs. *Margin* concolorous to receptacle, covered with hairs. *Disc* concave. *Hairs* 90–120 × 3.5–5 μm (\bar{x} = 103 × 4.7 μm, n = 30), cylindrical, septate, walls rough and covered with granules, pigmented, light to dark brown. *Ectal excipulum* 40–55 μm (\bar{x} = 45 μm, n = 10) in lower flanks, composed of thin-walled, slightly pigmented, light brown to hyaline cells of *textura prismatica* to *angularis*. *Medullary excipulum* 65–75 μm (\bar{x} = 70 μm, n = 10) in lower flanks, composed of thin-walled, hyaline cells of *textura porrecta*. *Hymenium* hyaline. *Paraphyses* 2.5–3.5 μm wide (\bar{x} = 2.7 μm, n = 20), numerous, filiform, conical apex, septate, sometimes exceeding the asci in length, smooth. *Asci* 80–95 × 8–11 μm (\bar{x} = 86.3 × 9.4 μm, n = 30), 8-spored, unitunicate, cylindrical-clavate, conical apex, amyloid, substipitate base, arising from croziers. *Ascospores* 40–65 × 1.5–2.5 μm (\bar{x} = 45.5 × 1.8 μm, n = 40), multi-seriate, fusoid, 1–4-septate, hyaline, guttulate, tapered towards the base. **Asexual morph:** Undetermined.

Material examined – China, Yunnan Province, Xishuangbanna, Jinghong, 9 June 2018, Zeng Ming, HC39 (MFLU 18-1826, HKAS102127).

GenBank accessions – LSU- MK591977, ITS- MK584950, SSU- MK585049, RPB2- MK614730

Notes – Our new collection HC39 from China clustered within *Erioscyphella abnormis* clade and the clade has strong statistical support of 99% (Fig. 35). The ITS and LSU data of our collection is 99% similar to *Lachnum abnorme* specimens of KUS-F52080 (ITS: 807/843-96% with 6 gaps, LSU: 1127/1128-99% with 1 gap) and TNS:F-16617 (ITS: 791/801-99% with no gaps).

Morphology of our collection is similar to the description of *E. abnormis* provided by Spooner (1987). However, all the observed ascospores were 1–4-septate and we did not observe 7-septate ascospores as described for *E. abnormis* (Spooner 1987). Asci in our collection are slightly smaller than described for *E. abnormis* (Spooner 1987). Therefore, we assume that our collection is immature. Our collection is similar to *E. australiense* which is characterised by 1–3-septate ascospores, but *E. australiense* differs in having lanceolate paraphyses (Spooner 1987).

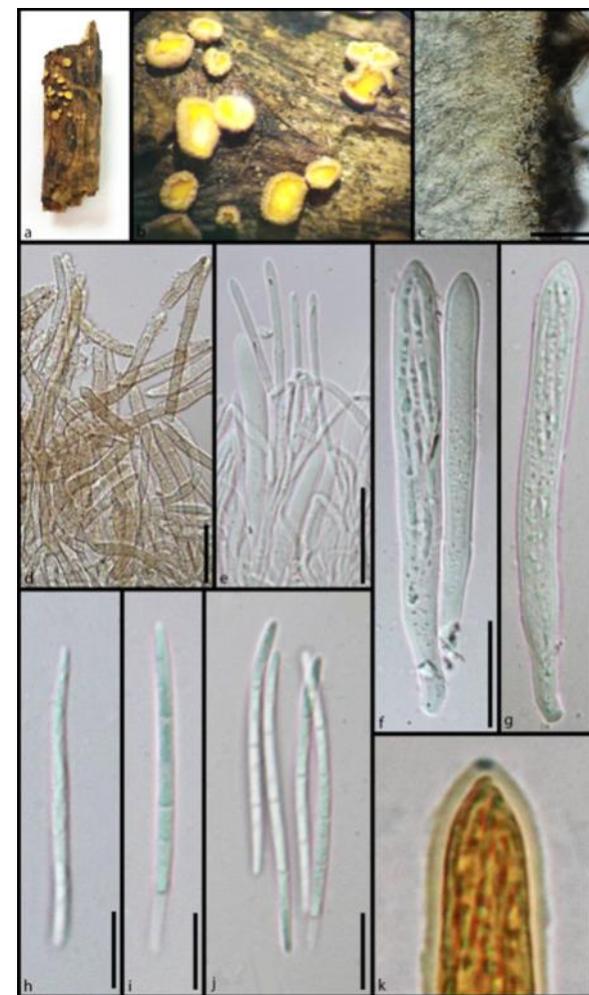


Figure 42 – Morphology of *Erioscyphella abnormis* (MFLU 18-1826) a Substrate. b Apothecia on wood. c Excipulum at margins. d Long cylindrical hairs. e Filiform paraphyses. f, g Cylindric-clavate asci. h–j Fusoid ascospores. k Amyloid ascus apex. Scale bars: c = 50 μm, d, f, g = 20 μm, e = 30 μm, k = 10 μm, h–j = 5 μm.

Genus *Erioscyphella* Kirschst. 1938

Erioscyphella abnormis (Mont.) Baral, Šandová & B. Perić, 2015

Peziza abnormis Mont., Annales des Sciences Naturelles Botanique 3: 351 (1835)

Trichopeziza abnormis (Mont.) Sacc., Sylloge Fungorum 8: 429 (1889)

Dasyscyphus abnormis (Mont.) Dennis, Kew Bulletin 17 (2): 320 (1963)

Lachnum abnorme (Mont.) J.H. Haines & Dumont, Mycotaxon 19: 10 (1984)

Diagnosis. Apothecia superficial, gregarious to cespitose, seated on a short stipe (**Figure 1A and C**). Receptacle at first cupulate, then becoming saucer-shaped to discoid, externally covered by white and brown hairs. Disc 0.5–2 mm in diameter, lemon to mustard yellow, or sometimes reddish yellow when fresh and dry (**Figure 1D**). Stipe 0.1–0.5 mm long, cylindrical, slightly narrowed toward the base, clothed with white and brown hairs (**Figure 1E**). Hairs (**Figure 2D**) cylindrical, slightly tapering toward the tips, straight to slightly bent, hyaline to dark brown, multiseptate, thin-walled, finely granulate throughout the length, $74\text{--}102 \times 3\text{--}4 \mu\text{m}$. The ectal excipulum (**Figure 2E**), composed of textura angularis to prismatica cells, elongated toward the base, thin-walled, smooth, hyaline to brownish, individual cells $5\text{--}17 \times 5.5\text{--}9 \mu\text{m}$. The medullary excipulum composed of loosely interwoven hyphae, narrow, hyaline, thin-walled, hyphae $2\text{--}3 \mu\text{m}$ wide. Asci (**Figure 2C**) arising from simple septa, cylindrical to cylindrical-clavate, narrowed toward the base, apex conical to conical-truncate, hyaline, 8-spored, apical pore blued in MLZ and IKI without KOH pretreatment, $104\text{--}141 \times 8\text{--}11 \mu\text{m}$ ($120.9 \pm 8.94 \times 9.3 \pm 0.72 \mu\text{m}$, $n = 22$). Ascospores (**Figure 2B**) arranged in parallel within the ascus, cylindrical-clavate to cylindrical-fusoid, slightly tapering toward the distal end, tips not sharply pointed, usually curved to sigmoid, sometimes undulated, hyaline, smooth, 5–7-septate, slightly constricted at septa, containing several guttules, $39\text{--}81 \times 2\text{--}3 \mu\text{m}$ ($66.9 \pm 10.96 \times 2.3 \pm 0.22 \mu\text{m}$, $Q = 29.2 \pm 4.67$, $n = 46$). Paraphyses (**Figure 2A**) narrowly lanceolate to cylindrical with slightly clavate apex, commonly straight, hyaline, septate, occasionally forked, the broadest parts $3\text{--}3.5 \mu\text{m}$ wide, exceeding the asci by $12\text{--}19 \mu\text{m}$.

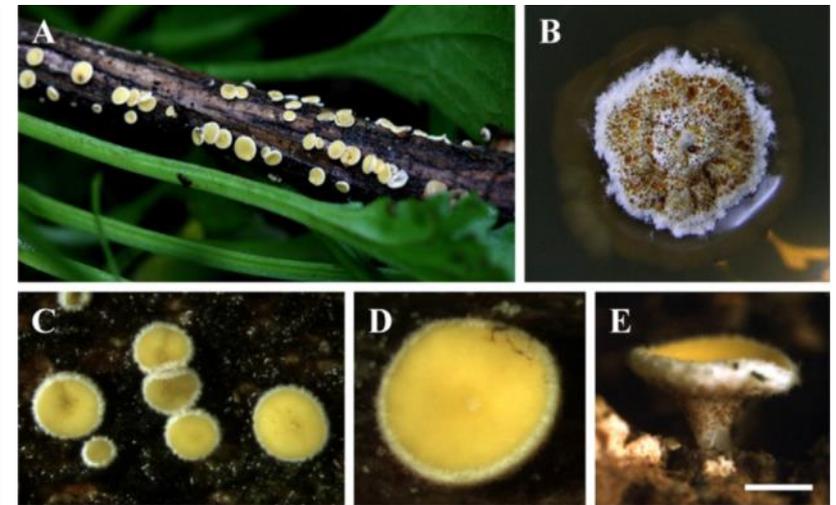


Figure 1. *Erioscyphella abnormis* (KUS-F52747): A, fruiting bodies occurred on a dead branch of *Stephanandra incisa*; B, colony incubated for 70 days on PDA (KACC43881); C, apothecia growing gregariously; D, apothecium discoid; E, apothecium seated on a distinct stipe. <scale bar: 0.5 mm (D–E)>.

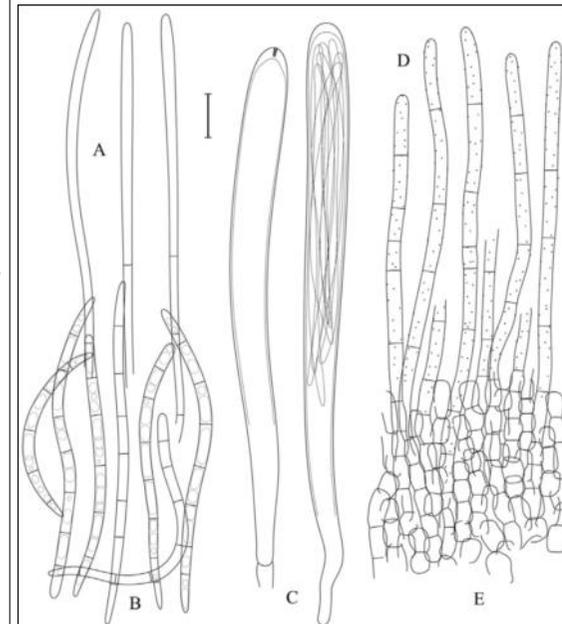
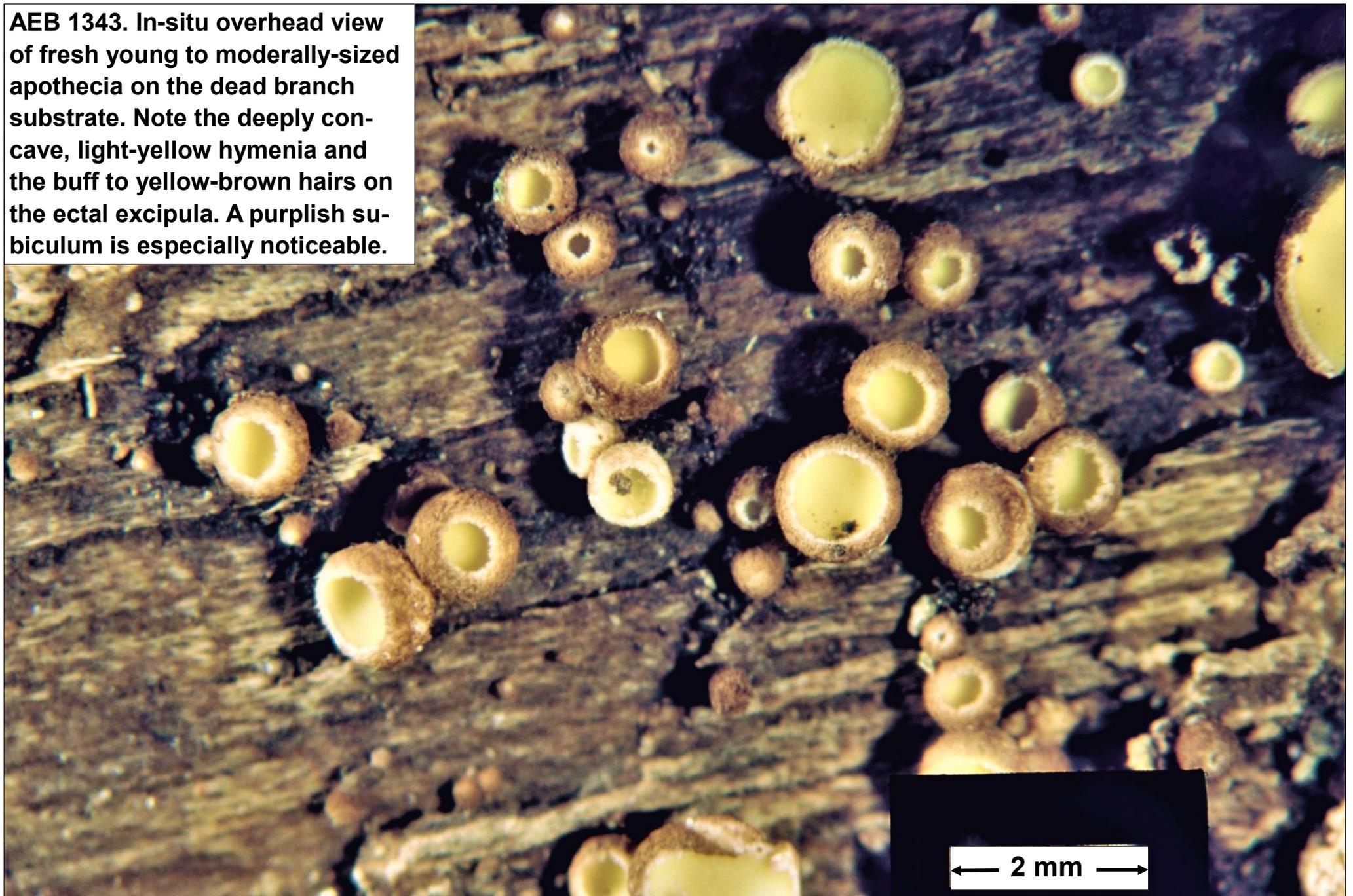


Figure 2. *Erioscyphella abnormis* (KUS-F52747): A, narrowly lanceolate paraphyses; B, cylindrical-fusoid ascospores, 5–7-septate; C, cylindrical asci arising from simple septa; D, cylindrical hairs, totally warty; E, ectal excipulum composed of prismatic cells. <scale bar: 10 μm >.



AEB 1343. In-situ side view of fresh stipitate apothecia on the dead branch substrate. Note the younger partially open apothecia with their deeply concave, light-yellow hymenia and the older apothecium with its flattened darker-yellow hymenium. Buff to yellow-brown hairs on the ectal excipula & a purplish subiculum are also obvious.

AEB 1343. In-situ overhead view of fresh young to moderately-sized apothecia on the dead branch substrate. Note the deeply concave, light-yellow hymenia and the buff to yellow-brown hairs on the ectal excipula. A purplish subiculum is especially noticeable.





Closeup of the previous page

← 1 mm →



AEB 1343. In-situ side view of a mature stipitate apothecium. Note its stout, dark, hairless, basal attachment to the substrate

← 1 mm →

AEB 1343. In-situ overhead view of fresh young to moderate-sized apothecia on the dead branch substrate. Note the deeply concave, light-yellow hymenia and the buff to yellow-brown hairs on the ectal excipula.



← 1667 μm →

AEB 1343. An in-situ overhead view of a fresh crowded fruiting on the dead branch substrate. The next two pages are closeups emphasizing apothecial external details.

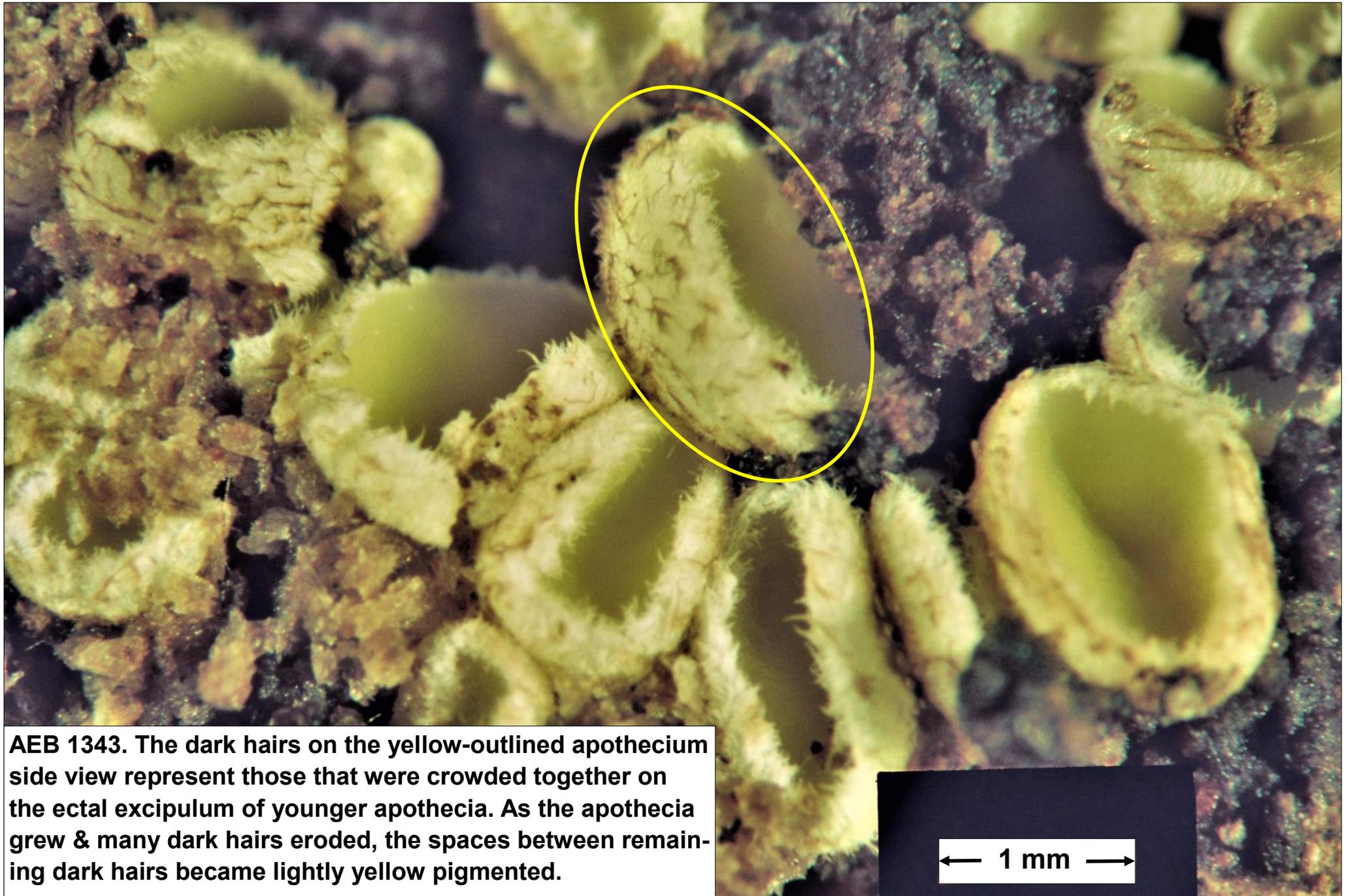


← 3333 μm →

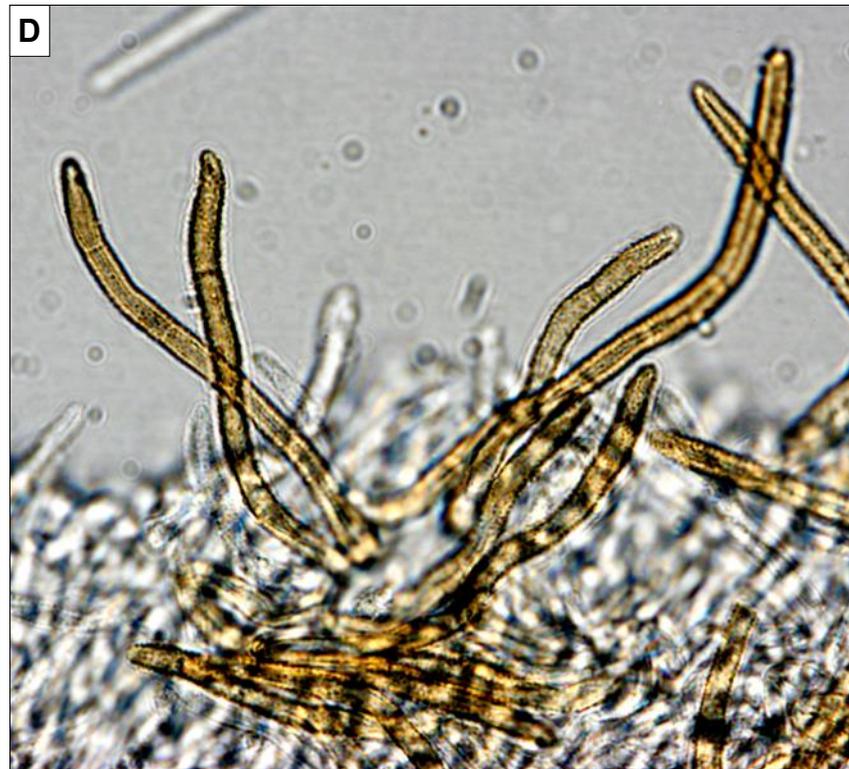
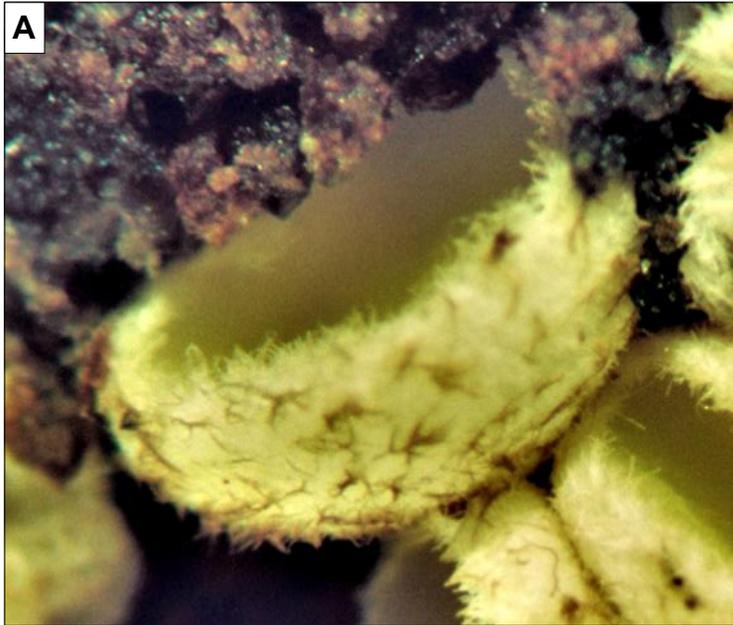


Closeup of the previous page

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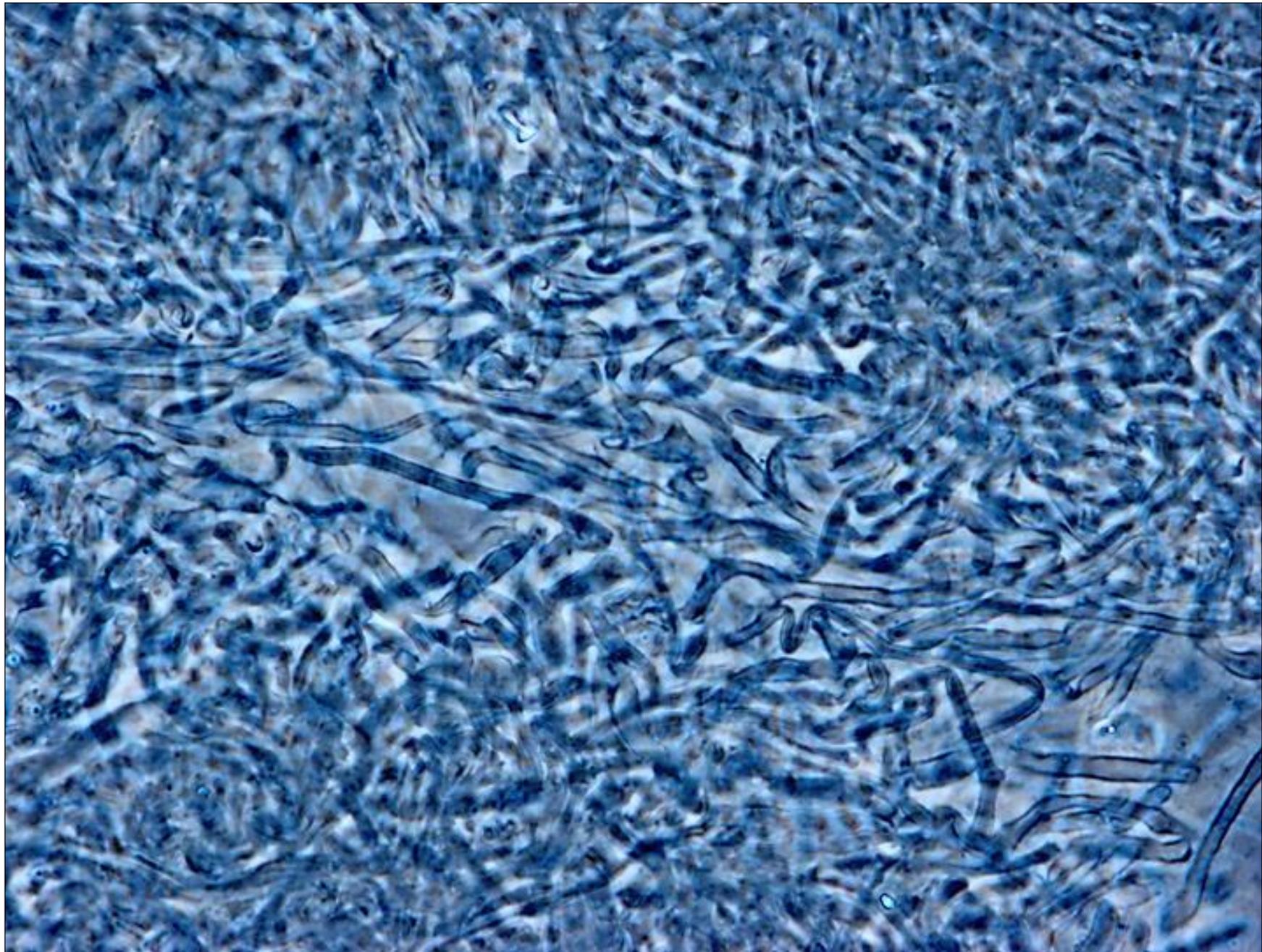
AEB 1343. The dark hairs on the yellow-outlined apothecium side view represent those that were crowded together on the ectal excipulum of younger apothecia. As the apothecia grew & many dark hairs eroded, the spaces between remaining dark hairs became lightly yellow pigmented.



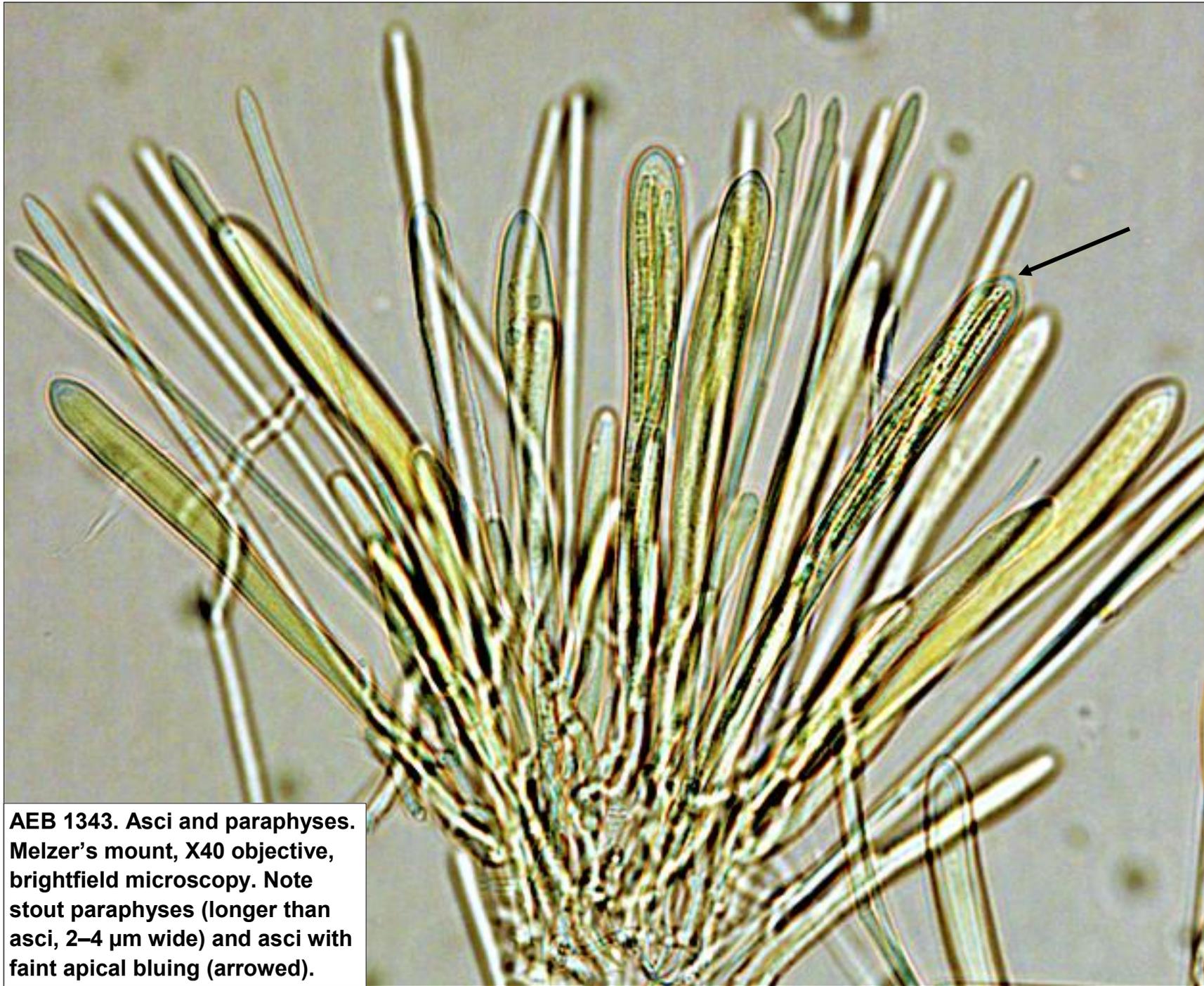
AEB 1343. A–D. Dark hairs & light hairs and hyphae on the apothecium ectal excipulum. A. Reoriented outlined-apothecium from the previous page. B–D. Same field of view: Shear's mounting fluid (SMF), brightfield microscopy, 'B' X40 objective, 'C,D' X100 obj., (C & D different focuses). Note the conspicuous septa and verruculose surface on the dark-pigmented hairs. Unpigmented hairs & hyphae also have a verruculose surface.



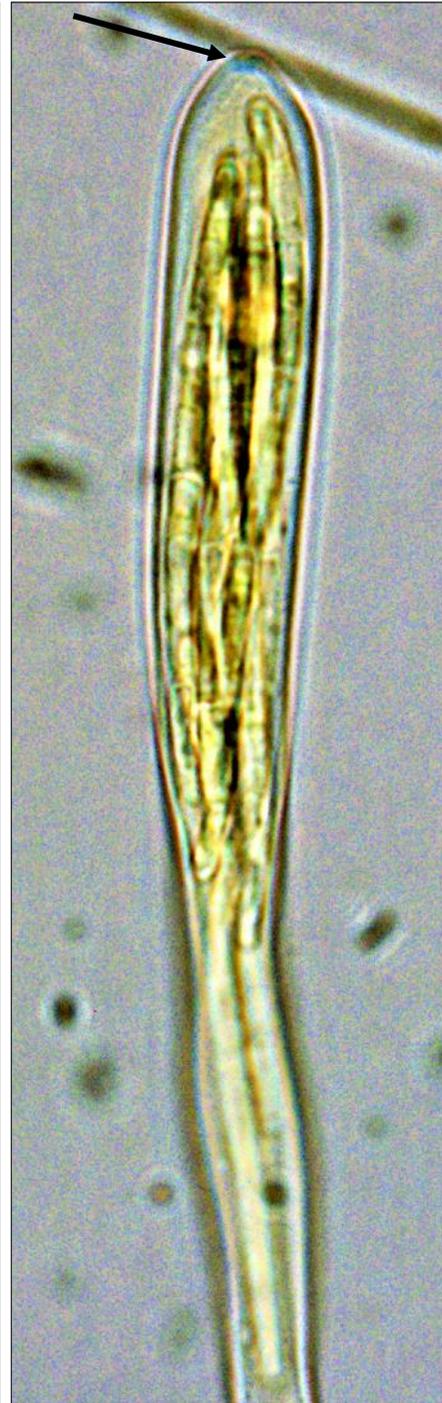
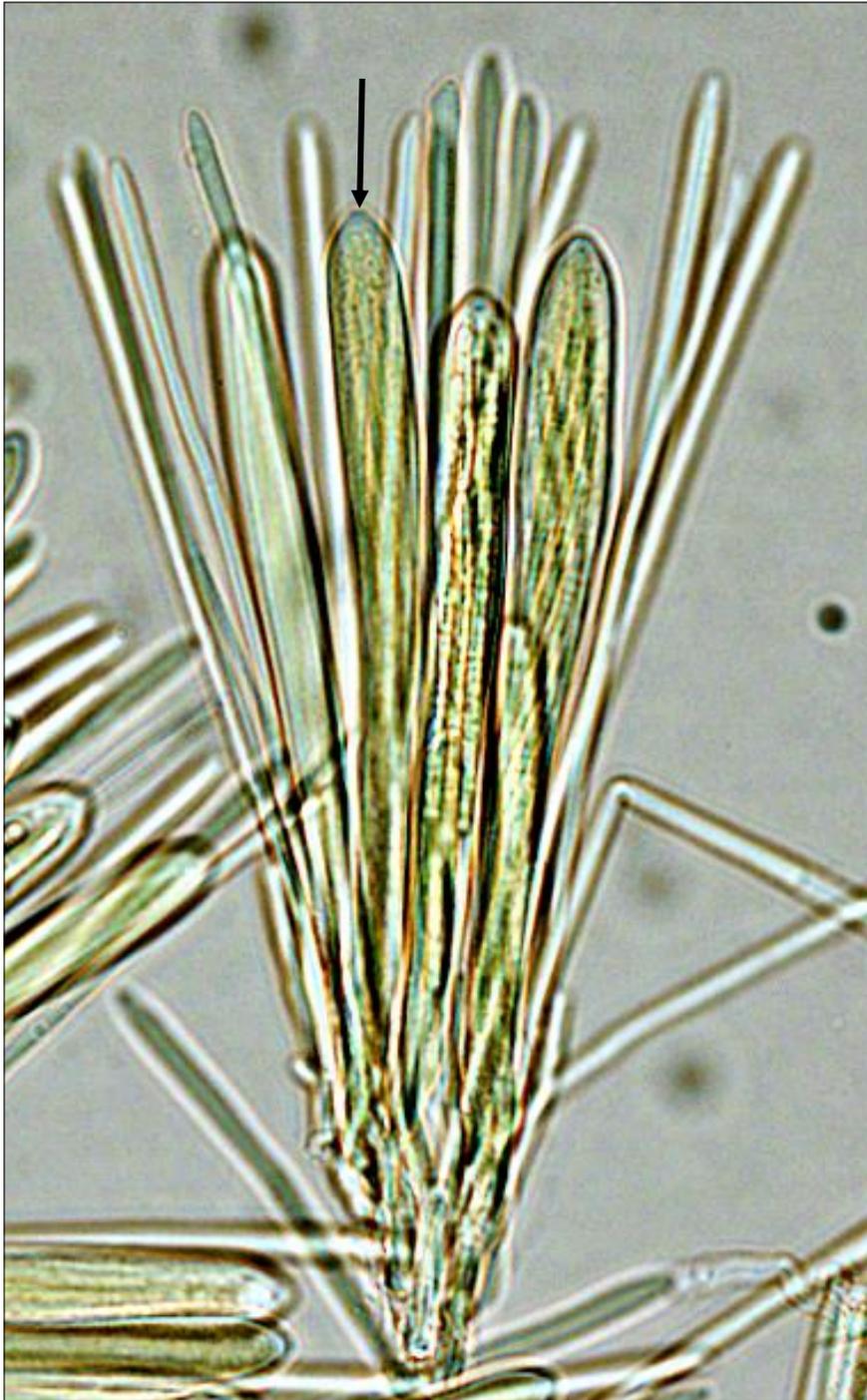
AEB 1343. Hairs & surface hyphae on the apothecium ectal excipulum. Both photos are the same field of view in Shear's mounting fluid (SMF) using brightfield microscopy. Left photo, X40 objective; right photo, X100 obj. By adjusting the light & contrast, it is clear that all surface hyphae & hairs have a verruculose surface.



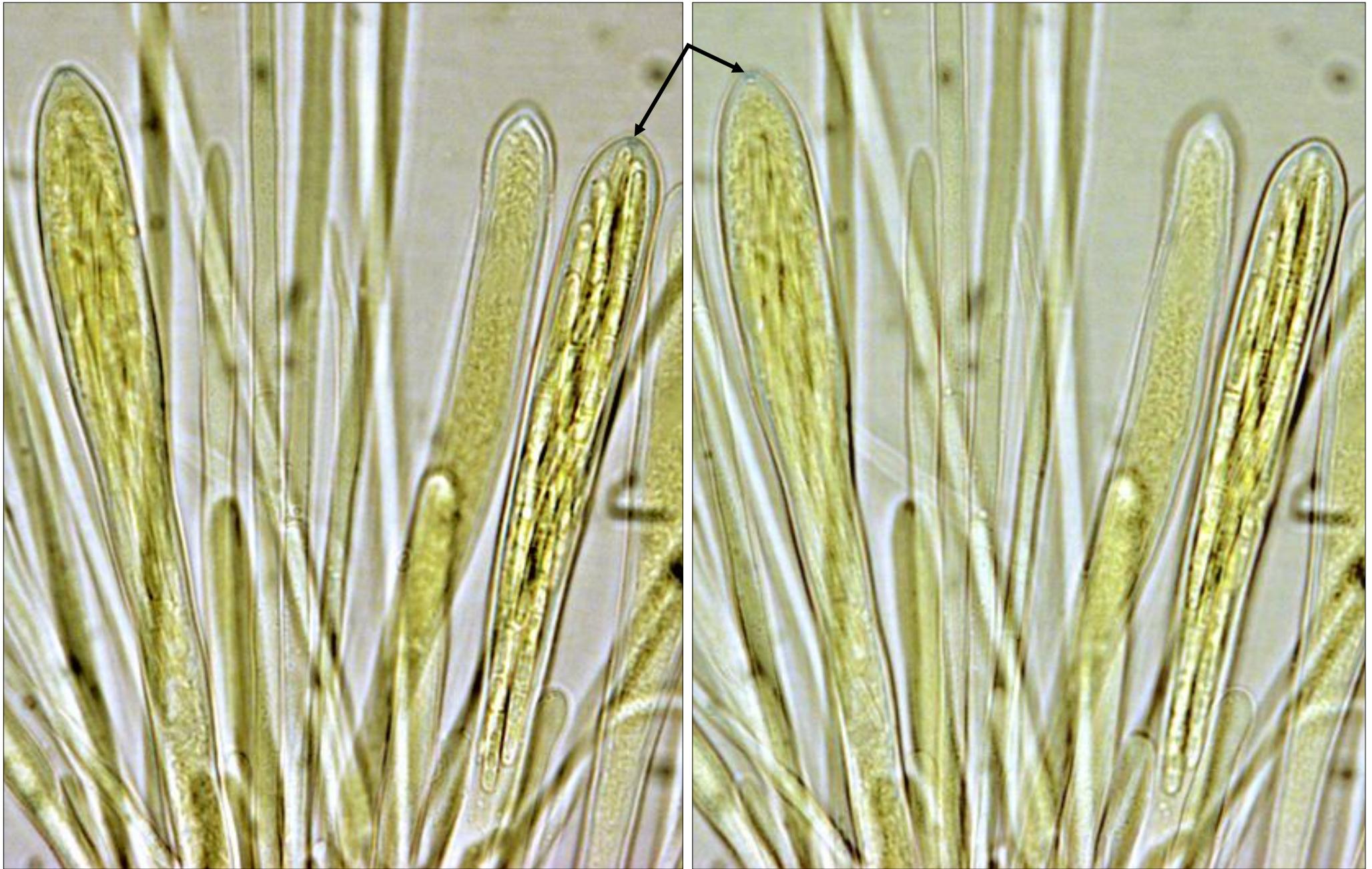
AEB 1343. Medullary excipulum of loosely woven, highly branched, hyaline textura intricata. Melzer's/SMF mount, X100 objective, phase microscopy.



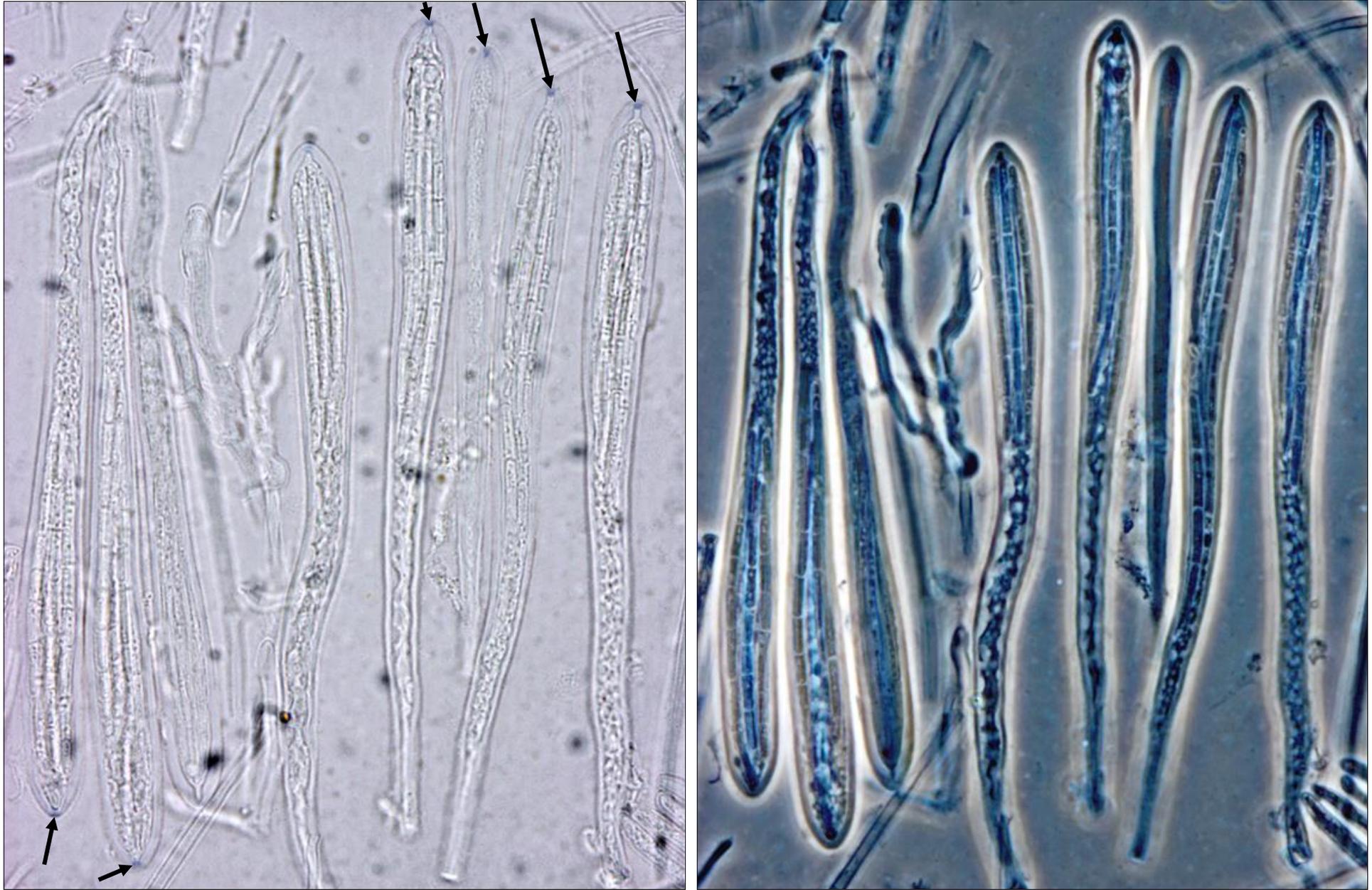
AEB 1343. Asci and paraphyses. Melzer's mount, X40 objective, brightfield microscopy. Note stout paraphyses (longer than asci, 2–4 μm wide) and asci with faint apical bluing (arrowed).



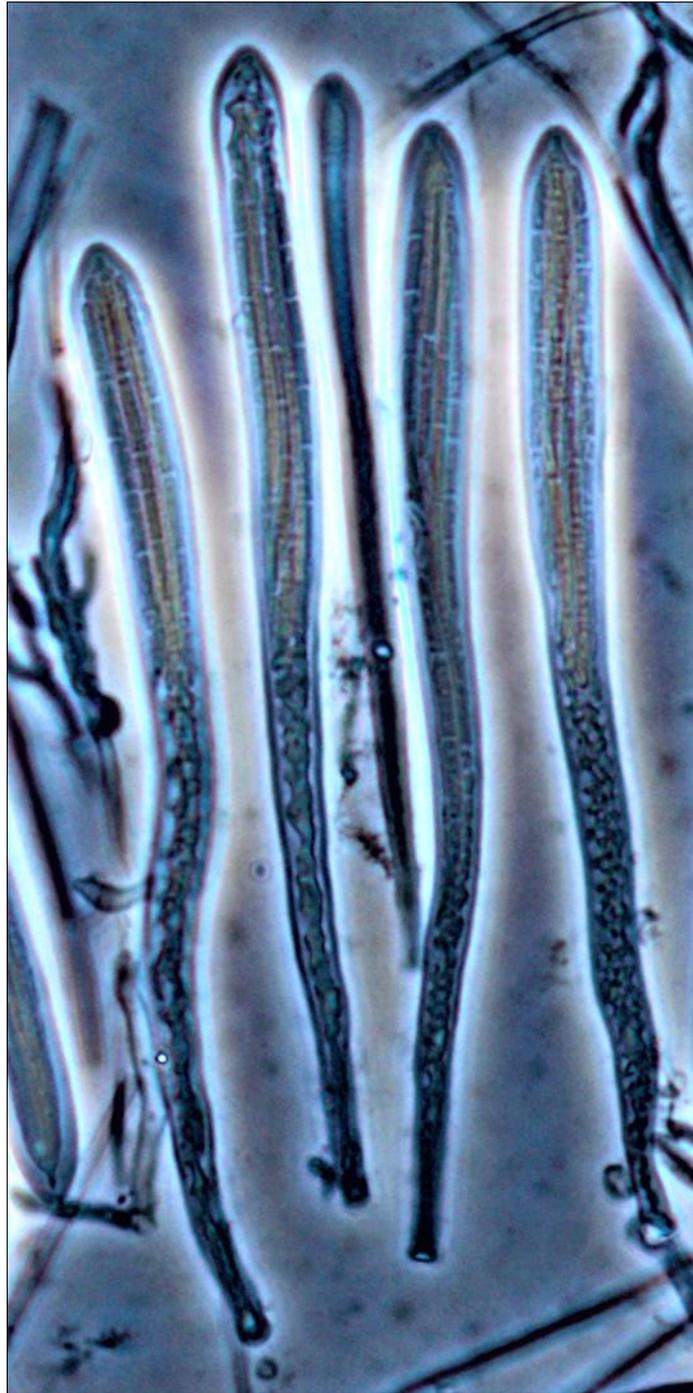
AEB 1343. Asci and paraphyses. Melzer's mount, brightfield microscopy, left photo X40 objective, right photo X100 obj. Note faint apical bluing (arrowed).



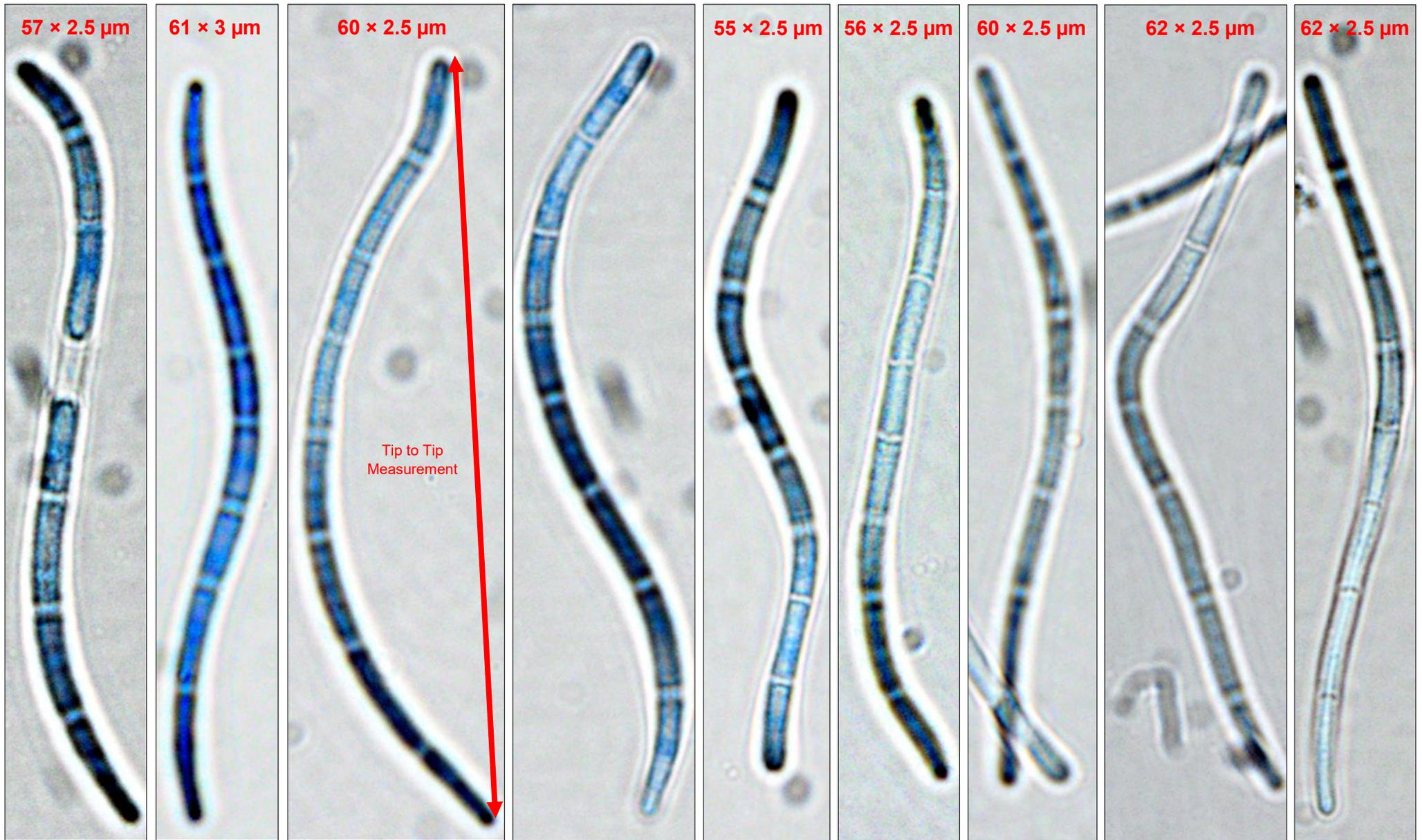
**AEB 1343. Asci and paraphyses. Melzer's mount, X100 objective, brightfield microscopy, both photos same field (different focus).
Note faint apical bluing (arrowed).**



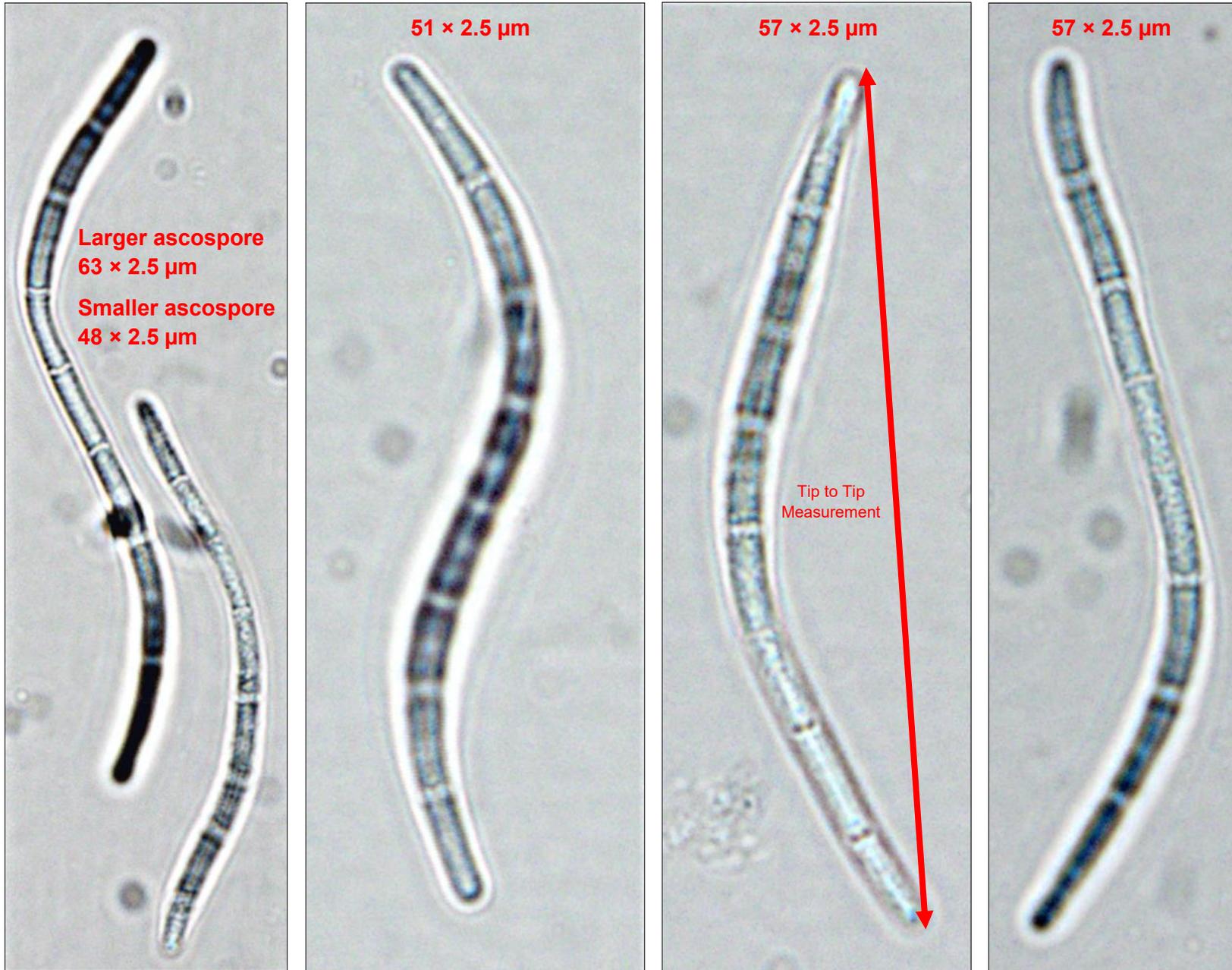
AEB 1343. Emphasis on Asci. Both photos same field of view: Melzer's/SMF mount, X100 objective, left (brightfield), right (phase). Asci $107.5\text{--}122.5 \times 7\text{--}9 \mu\text{m}$ ($n=15$). Left photo apical bluing arrowed. Although ascospores are clearly septate, their number/ascus is less distinct (roughly 8) and their exact shape, size and number of septa were only accurately seen when discharged.



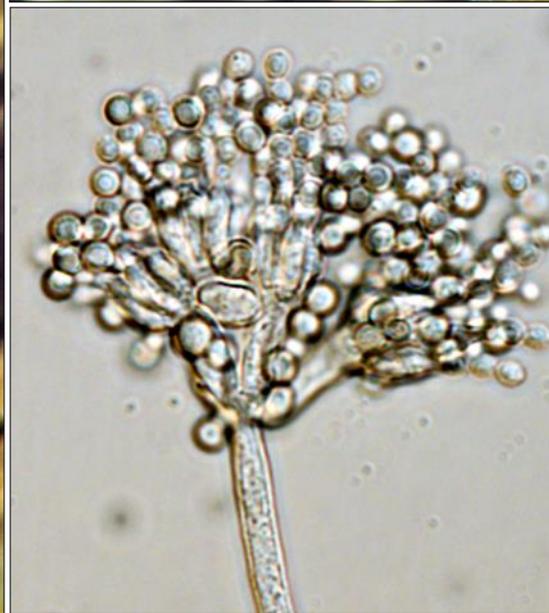
AEB 1343. Emphasis on Asci. Both photos same field of view: Melzer's/SMF mount using X40 objective, left (DIC) and right (phase). Asci $107.5\text{--}122.5 \times 7\text{--}9 \mu\text{m}$ ($n=15$). Left photo apical bluing arrowed. Although ascospores are clearly septate, their number/ascus is less distinct (roughly 8) and their exact shape, size and number of septa were only accurately seen when discharged. (see next 2 pages)



AEB 1343. Ascospores. Photos from a water mount irrigated with aniline blue lactic acid, under the X100 objective using brightfield microscopy. Spore sizes: 48–63 × 2.5–3 μm (n=15); all measured from tip to tip as indicated above. Spores were retrieved from a water drop placed on the hymenial surface of a large apothecium and, using a small loop, placed on a microscope slide. Of hundreds seen on the slide, ALL were 7 septate regardless of their shape or length.



AEB 1343. Ascospores. Other photos from the water mount irrigated with aniline blue lactic acid shown on the previous page. As expected, the aniline blue didn't reach all spores equally.



Postscript: Having prepared the AEB 1343 herbarium packet, I left the numerous remaining apothecia in the original moisture chamber. This bluish *Penicillium* then appeared on the hymenial surface of the remaining apothecia – but not elsewhere on the dead branch. Happen chance most likely, but the same biverticillate *Penicillium* predominated throughout. Its DIC photo, to the left, was taken in 70% EtOH under the X100 objective. Conidiophores were long with a single apical penicillus and roughened globose conidia (3 μm in diameter).