

***Lasiobelonium variegatum* (Fuckel) Raitv. AEB 1284 (= PDD 111268) – see comments below on this and related species**

Collection site: Belmont Regional Park, Dry Creek entrance

Collection substrate: dead wet wood

Collection date: 14 September 2016

Collector & Identifier: Dan Mahoney

Voucher materials: Dried herbarium specimen [AEB 1284 (= PDD 111268)] accompanied by 3 semipermanent slide mounts – Melzer's, Shear's mounting fluid (SMF) and aniline blue lactic acid; Digital compound microscope photos (Olympus BX51 scope with DP25 digital camera); Zeiss dissecting scope 35 mm photos (Stemi SV 11 with MC 80 camera).

Description: **Apothecia** cup-like, numerous, superficial, single to clustered, sessile to subsessile, 0.3 – 1.0 mm in diameter when fully open, with brown hairs and a white hymenium. When dehydrated, subglobular, covered with brownish hairs and hymenial surface not visible.

[Apothecia in situ photos 20 Sept. 2016 – The apothecia had been in a partially ventilated collection box in the lab and had dehydrated somewhat. They lacked the spectacular liquid drops of various sizes that had initially been seen at the tips of the pigmented hairs that lined the receptacle rim. In places where droplets had been were small pasty-looking accumulations (with tiny rather inconspicuous crystals). Also most apothecia were closed up a bit with the whitish hymenium less visible. Apothecia in the dried herbarium specimen were so dehydrated that only quite small pasty accumulations were present at the tips of the pigmented hairs that lined the receptacle rim and the receptacles were closed up so hymenial surfaces were not visible or barely so.]

[Apothecia in situ photos 22 Sept. 2016 – The apothecia had been in a tightly closed collection box since the photos above on September 20th. The elevated humidity there resulted in some views similar to, but not as spectacular as, those seen when the apothecia were first collected on September 14th. Many apothecia had numbers of liquid drops at their receptacle rims and the receptacles were fully open revealing their whitish hymenia.]

Continued from page 1:

Hairs in lower portions scattered but numerous, smooth and light brown throughout, septate, long, wavy (accurate length measurements not possible, about the same width as hairs bordering the cup rim); **hairs lining the cup rim** 180–250 X 3(-4) μm , crowded, much more numerous, straight with slightly thicker walls, brown except near their slightly tapering, rounded to somewhat capitate, hyaline apex, septate, appearing smooth except at their hyaline apex where small inconspicuous crystalline bodies roughened the surface (especially when the liquid originally located there evaporated), to a much lesser extent these crystalline bodies were also seen (under the oil immersion objective) scattered along the pigmented portion.

Ectal excipulum a textura globosa. **Paraphyses** lanceolate, longer than the asci, smooth, hyaline, sparingly septate in the lower portion, widest approx. 12 μm behind the tip and tapering from that point toward the apiculate tip. **Asci** 8-spored, cylindrically clavate with the small apical pore bluing in Melzer's. Ascospores at first uniseriately overlapping but soon biseriately arranged. Asci mostly 60-70 X 5-6 μm . **Ascospores** narrowly ellipsoid-fusiform, symmetrical or occasionally flattened on one side, hyaline, smooth, mostly with one median or near-median septum (rarely with 2 septa), straight to slightly curving, (9-)10–13(-15) X 2.5–3 μm in water mounts (slightly smaller in Melzer's and Aniline blue lactic acid, staining blue in the latter). Germination from one extremity occasionally observed.

Comments:

Online images and descriptions: European collections of *Lasiobelonium variegatum* are reasonably common online with some good illustrations – and some with descriptions as well. For an example of these see 'MycoDB Photos de champignons'. Specimen AEB 1284 is a reasonable match to these illustrations and descriptions.

New Zealand PDD online records: In addition to the present record (PDD 111268), there are two others (PDD 60067 & PDD 59510 – the latter re-identified, after sequencing, as a species of *Trichopeziza*)

Nomenclatural background: RWG Dennis at KEW was among the experts on *Dasyscyphus*, most of whose species are now placed in the large genus *Lachnum*. His 1963 treatment is worth noting because he recognized a complex of species closely related (or identical) to AEB 1284. Citation: Dennis RWG. 1963. A Redisposition of Some Fungi Ascribed to the Hyaloscyphaceae. Kew Bulletin 17(2), 319-379. See the next page of this pdf for copies from pp. 373 & 330 of that publication.

Species Fungorum's current records are these: Current Name: *Lasiobelonium variegatum* (Fuckel) Raitv., Scripta Mycol., Tartu 9: 116 (1980); **Synonymy:** 1) *Dasyscyphus variegatus* Fuckel [as '*Dasyscypha*'], Jb. nassau. Ver. Naturk. 27-28: 61 (1874). 2) *Lachnum variegatum* (Fuckel) Rehm, Rabenh. Krypt.-Fl., Edn 2 (Leipzig) 1.3(lief. 41): 899 (1893). 3) *Atractobolus variegatus* (Fuckel) Kuntze, Revis. gen. pl. (Leipzig) 3(3): 446 (1898).

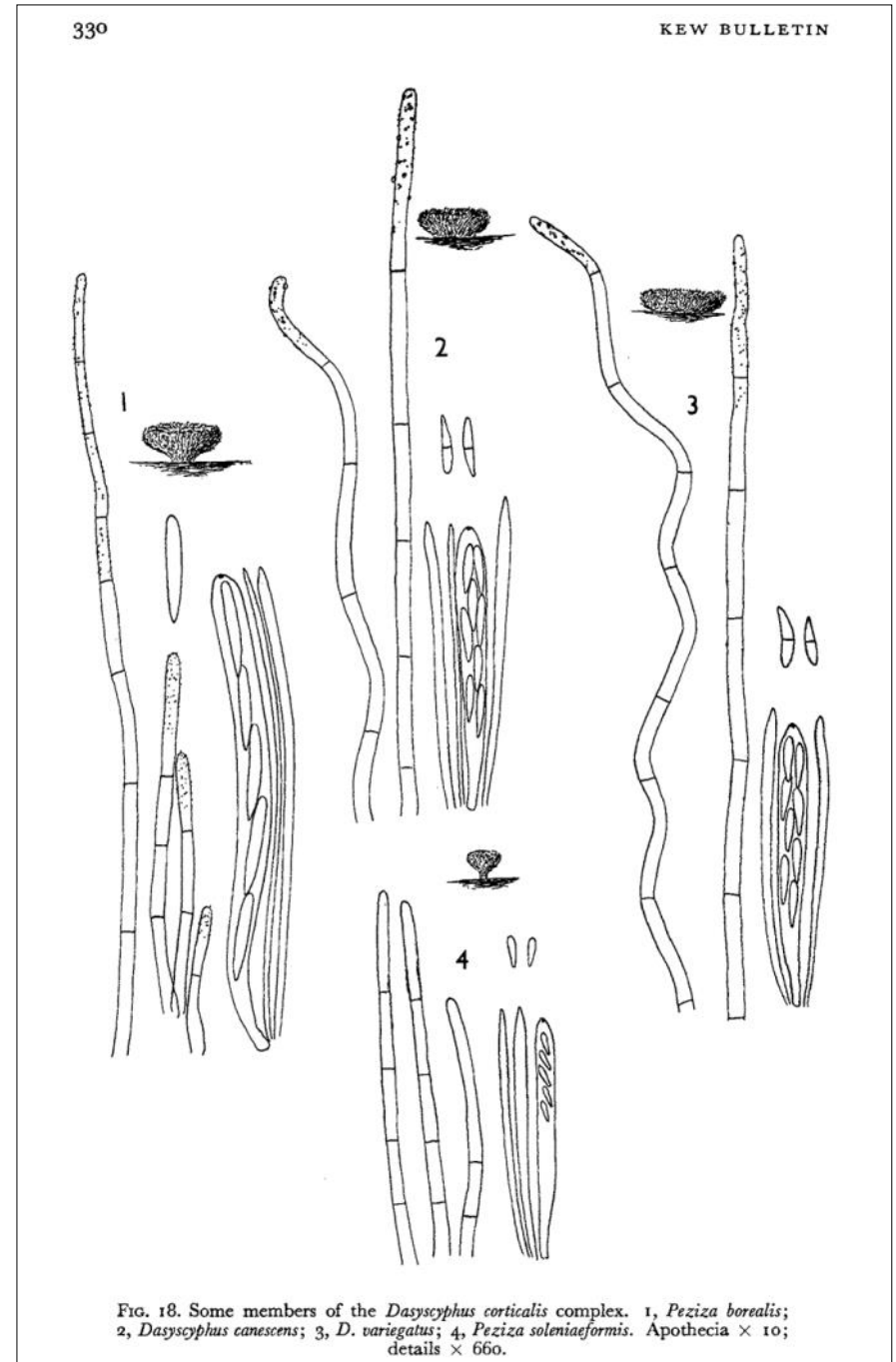
Dasyscypha variegata Fuck. in Jahrb. Nass. Ver. Nat. 27/28: 61 (1873).

Lachnum variegatum (Fuck.) Rehm in Rabenh. Krypt. Flora I (3):899 (1893).

Apothecia gregarious, sessile on a broad base, shallow cupulate, receptacle densely clothed with tangled tawny hairs; disc yellowish when soaked up, gray-brown when dry, about 1 mm. diameter. Hairs cylindrical, undulating or spirally twisted, up to $200 \times 4 \mu$, septate, wall thin, brown and smooth over much of their length, hyaline and finely granulate at the obtuse tip. Asci cylindrical-clavate, 8-spored, $60-65 \times 6 \mu$, pore blued by Melzer's reagent; ascospores elliptic-fusoid, 1-septate, $11-14 \times 2-3 \mu$; paraphyses narrowly lanceolate $2-3 \mu$ thick, up to 10μ longer than the asci. (Fig. 18, p. 330).

'An faulenden stammen Fraxinus in Gesellschaft mit *D. flavo-fuliginea*. Selten, im Fruhling, Reichartshausen', ex Herb. Fuckel.

There seem to be no loose crystal balls among the hairs but this is clearly a member of the *D. corticalis* (Pers. ex Fr.) Masee complex and identical with the later *D. canescens* (Cooke) Masee.



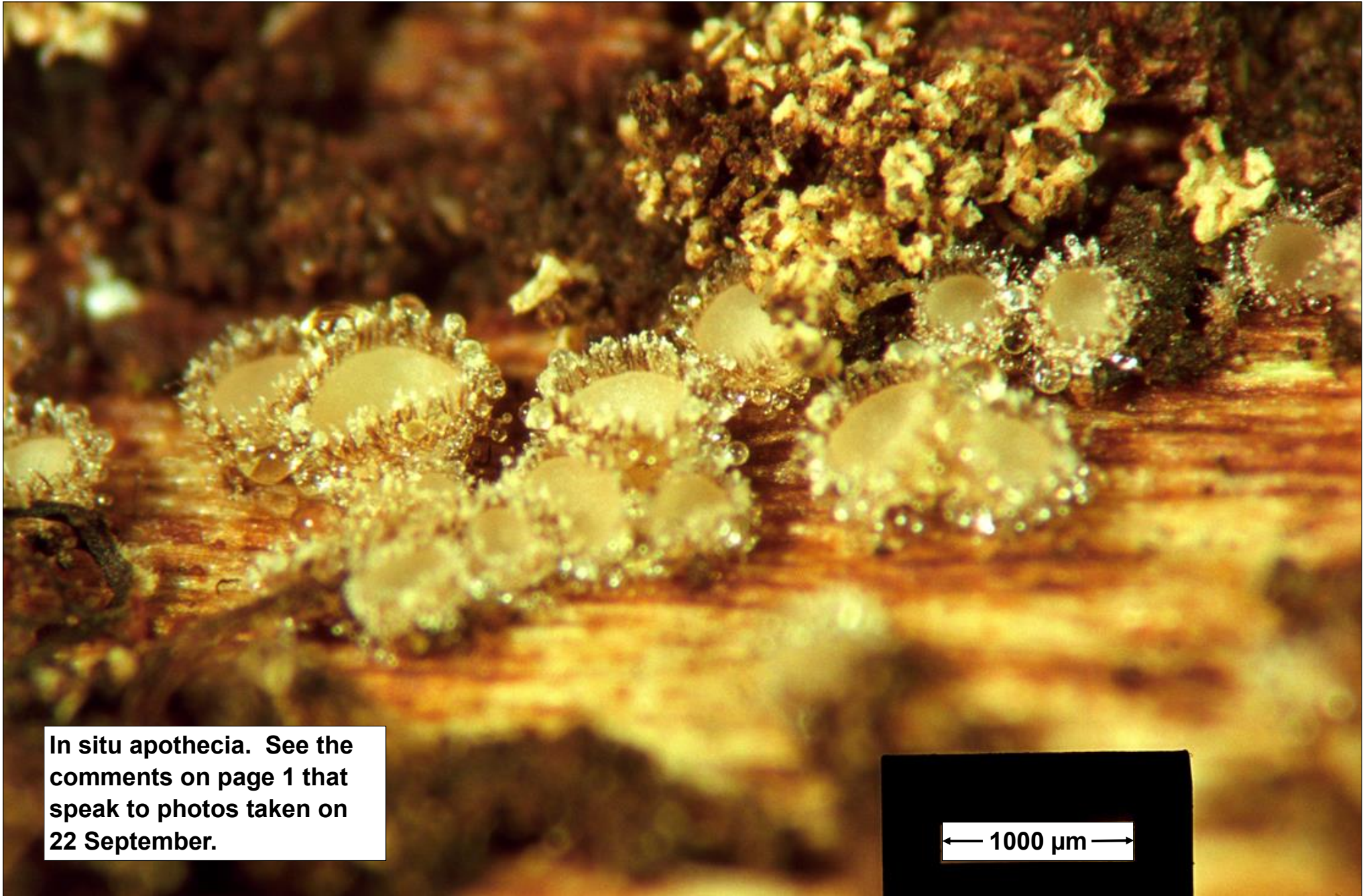
Another European author (Evtimia Dimitrova. 2000. A taxonomic study of Hyaloscyphaceae in Bulgaria. II. *Dasyscyphus*, *Lachnum*, *Trichopezizella*. PHYTOLOGIA BALCANICA 6(1): 133-145.) describes *Dasyscyphus corticalis* which also seems very similar, if not identical, to AEB 1284. Its description on p. 135 is given below:

Dasyscyphus corticalis (P e r s. : Fr.) M a s s e e, Brit. Fungus- Flora, 4, p. 360, 1895 (Fig. 4).

Peziza corticalis P e r s. : F r., Syst. Mycol., 2, p. 96, 1822; *Lachnella corticalis* (P e r s. : F r.) F r., Summa Veg. Scand., p. 365, 1849; *Helotium corticale* (P e r s. : F r.) P. K a r s t e n, Mycol. Fenn. 1, p. 159, 1871; *Lachnum corticale* (P e r s. : F r.) N a n n f., Nova Acta Regiae Soc. Sci. Upsal., ser. 4, 8, p. 265, 1932; *Belonidium corticale* (F r.) R a i t v., Scripta Mycol., p. 56, 1970.

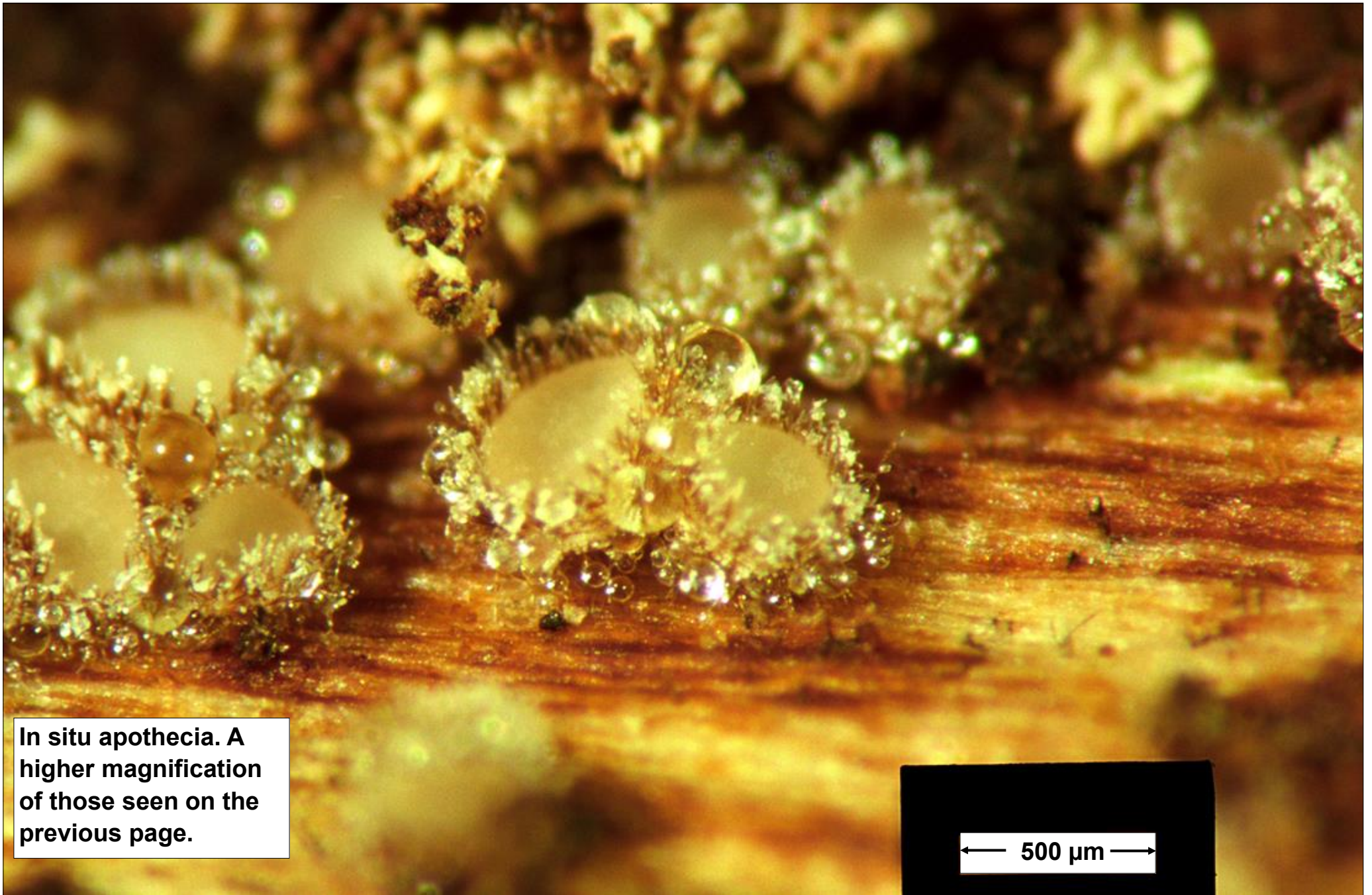
References: B a r a l & K r i e g l s t e i n e r (1985, p. 65), D e n n i s (1949, p. 39), F a r r & a l. (1989, p. 665), R a i t v i i r (1970, p. 56).

Apothecia superficial, sessile or subsessile, single or in groups, semiglobular; disc 0.2-0.8 mm in diameter, pale-yellow, covered with pale-beige to brown hairs; hairs cylindrical, septate, tapering towards the tip, apically hyaline, covered with fine baculate grains, 120-185 × 3.5-4 μm. Asci 62.5-95 × 5-8 μm, cylindrical clavate, with rounded tips and a small iodine-blue pore, 8-spored. Ascospores 8-12.5 × 2-2.5(-3) μm, ellipsoid fusiform, unicellular, with 1 septum when mature, obliquely uniseriate in the ascus, hyaline. Paraphyses cylindrical, acuminate at the tips, 1.5-2 μm wide, slightly longer than the asci. Substrate: rotten deciduous wood. Distribution in Bulgaria: on rotten deciduous wood, Vitosha region (Mt Vitosha), B.A., SOM 7110-M; on the bark of deciduous tree root, Vitosha region (Mt Vitosha), B.A., SOM 6403-M; on the bark of *Platanus orientalis* L., Mt Belasitsa, E.D., SOM 21484-M. The species was reported only with chorological data in Bulgaria (A l e x a n d r o v 1968).



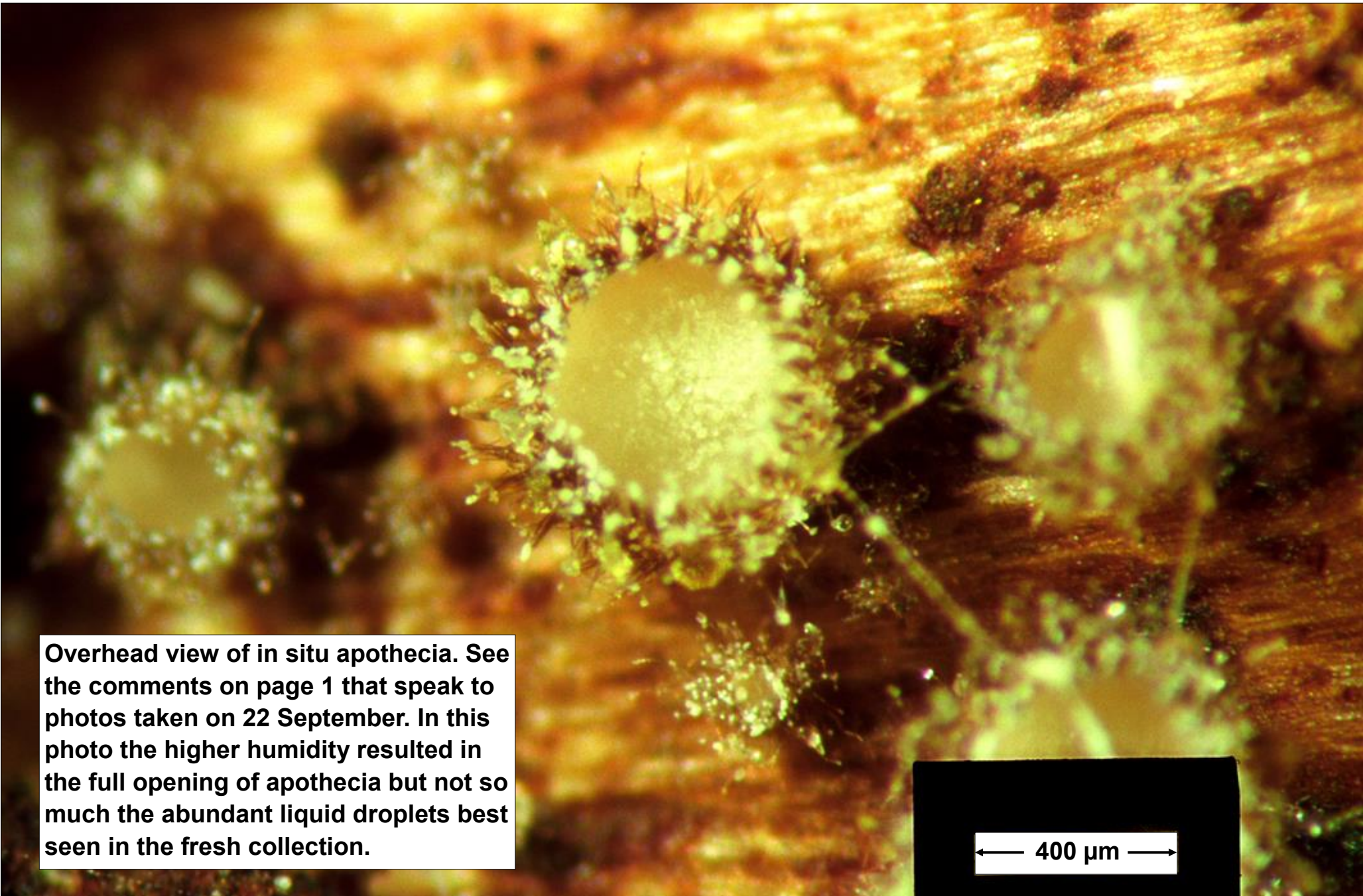
In situ apothecia. See the comments on page 1 that speak to photos taken on 22 September.

← 1000 μm →



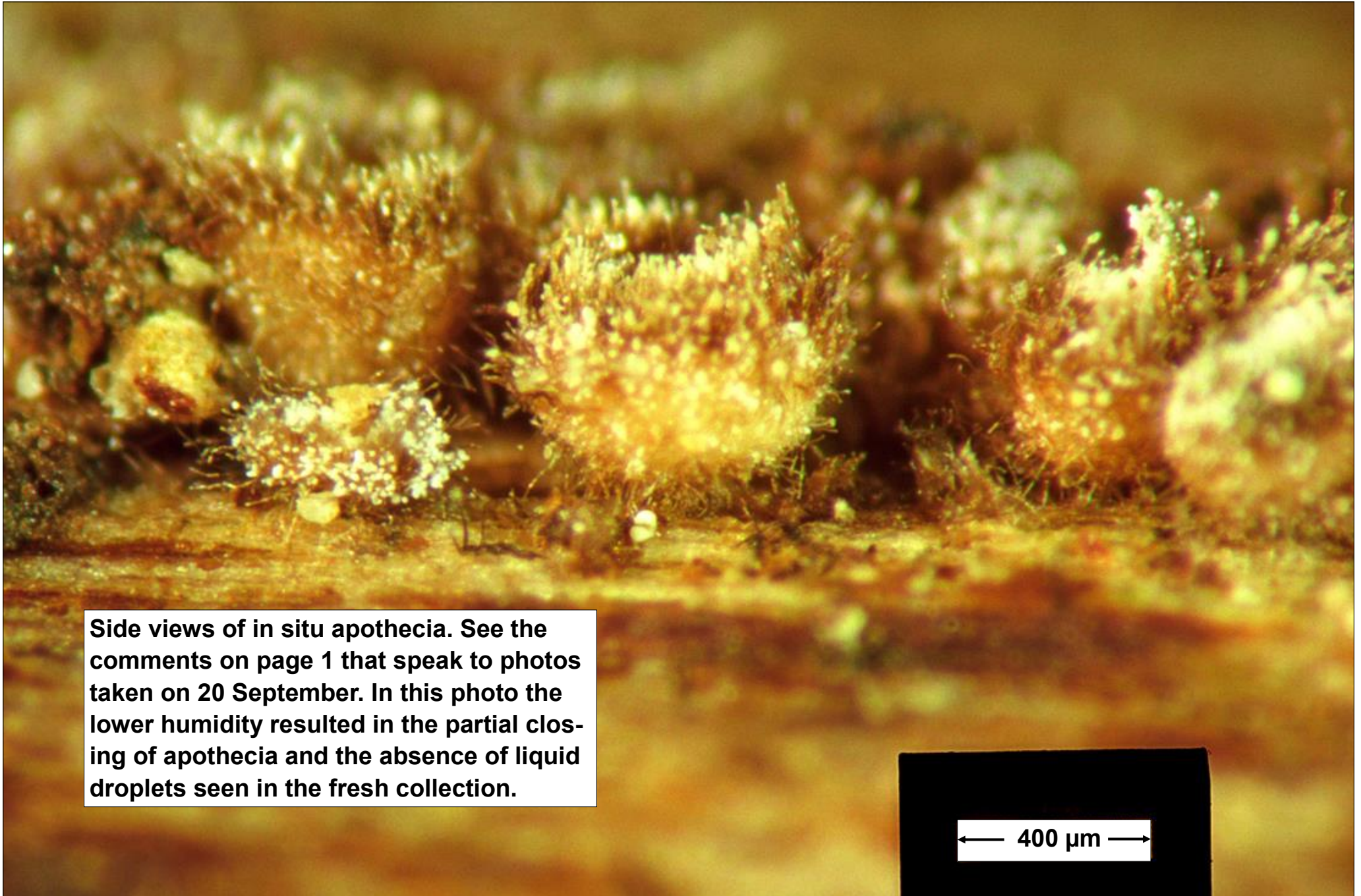
In situ apothecia. A higher magnification of those seen on the previous page.

← 500 μm →

A close-up, overhead photograph of several fungal apothecia. The apothecia are roughly spherical and have a fuzzy, spiky appearance. They are situated on a surface with a distinct fibrous or woven texture, likely wood or bark. The lighting is warm, highlighting the intricate details of the apothecia and the surrounding material. A scale bar in the bottom right corner indicates a length of 400 micrometers.

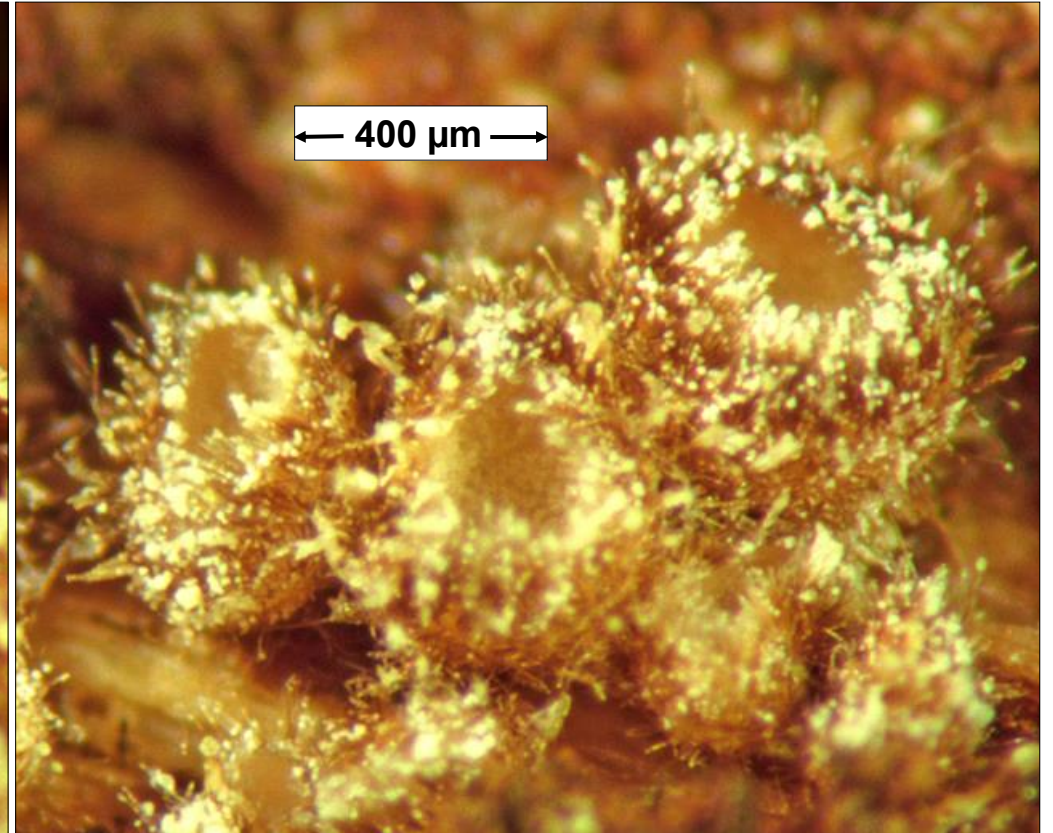
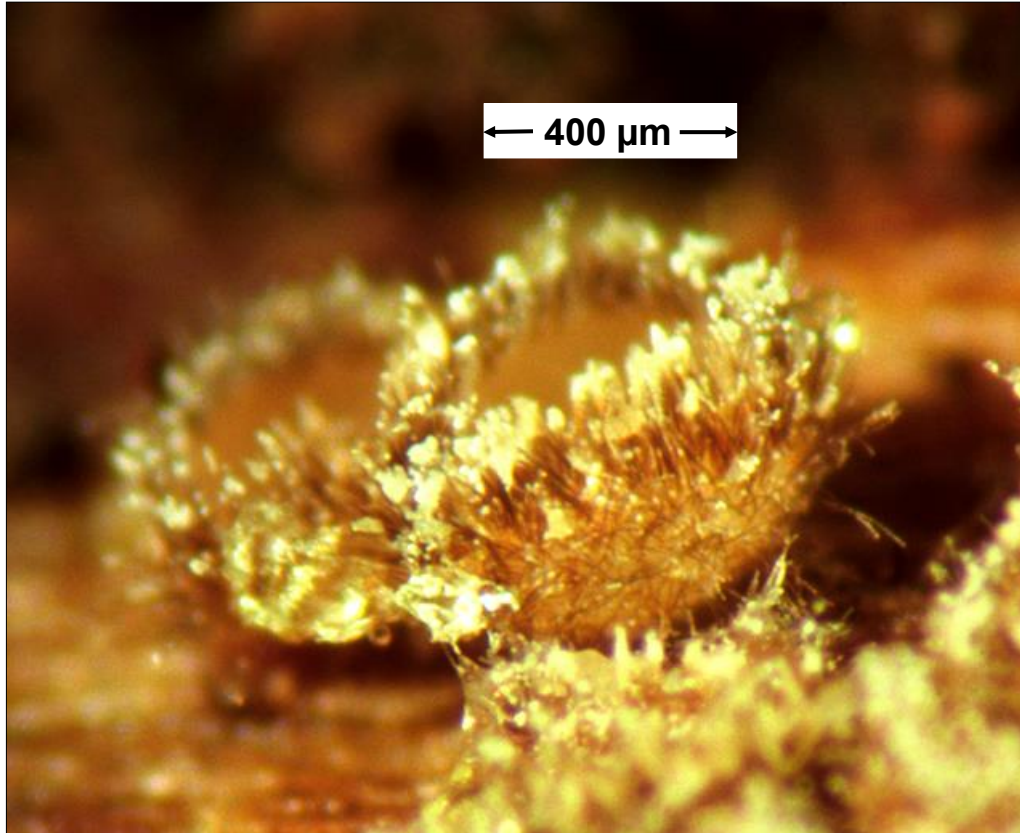
Overhead view of in situ apothecia. See the comments on page 1 that speak to photos taken on 22 September. In this photo the higher humidity resulted in the full opening of apothecia but not so much the abundant liquid droplets best seen in the fresh collection.

← 400 μm →

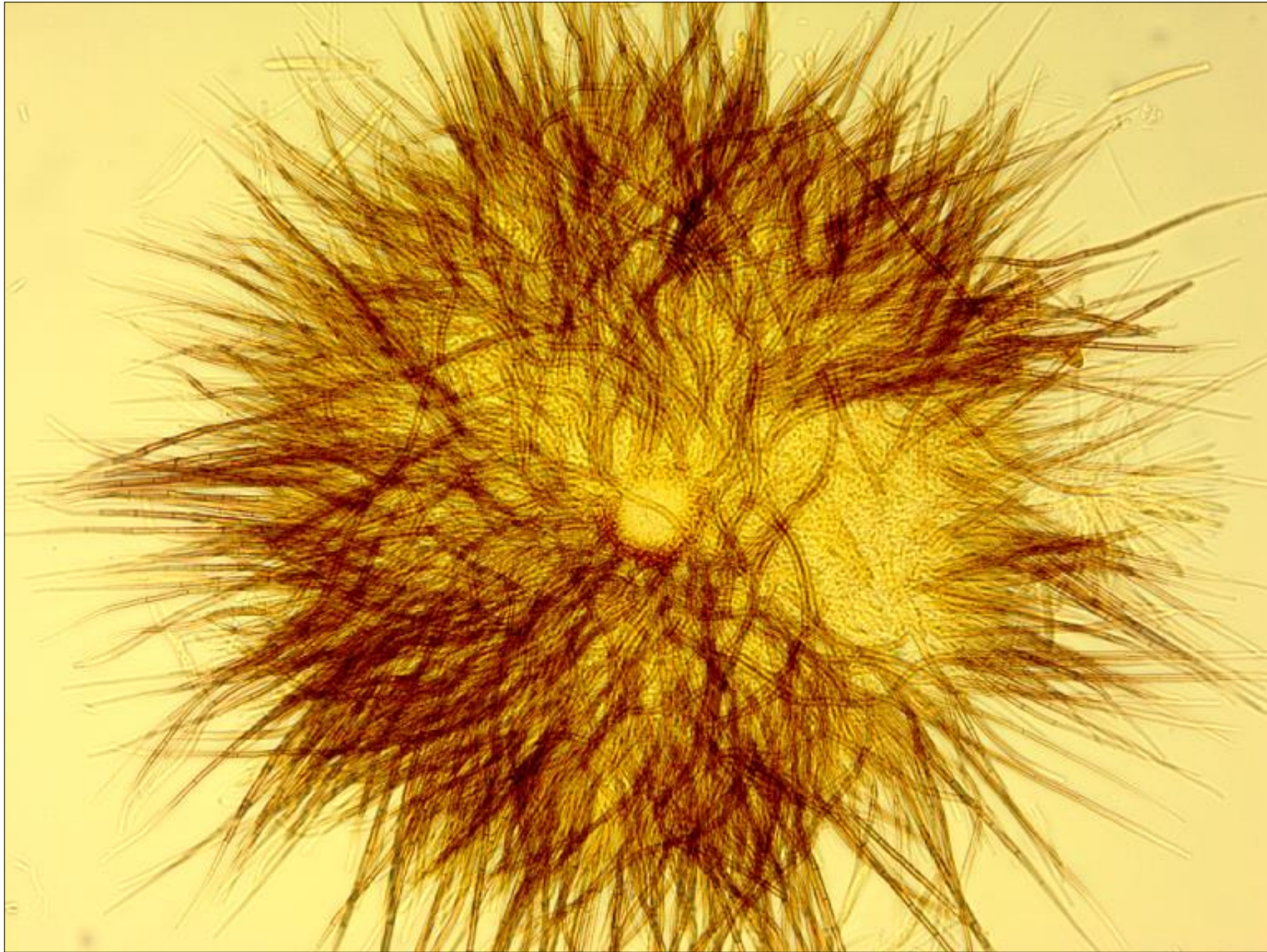


Side views of in situ apothecia. See the comments on page 1 that speak to photos taken on 20 September. In this photo the lower humidity resulted in the partial closing of apothecia and the absence of liquid droplets seen in the fresh collection.

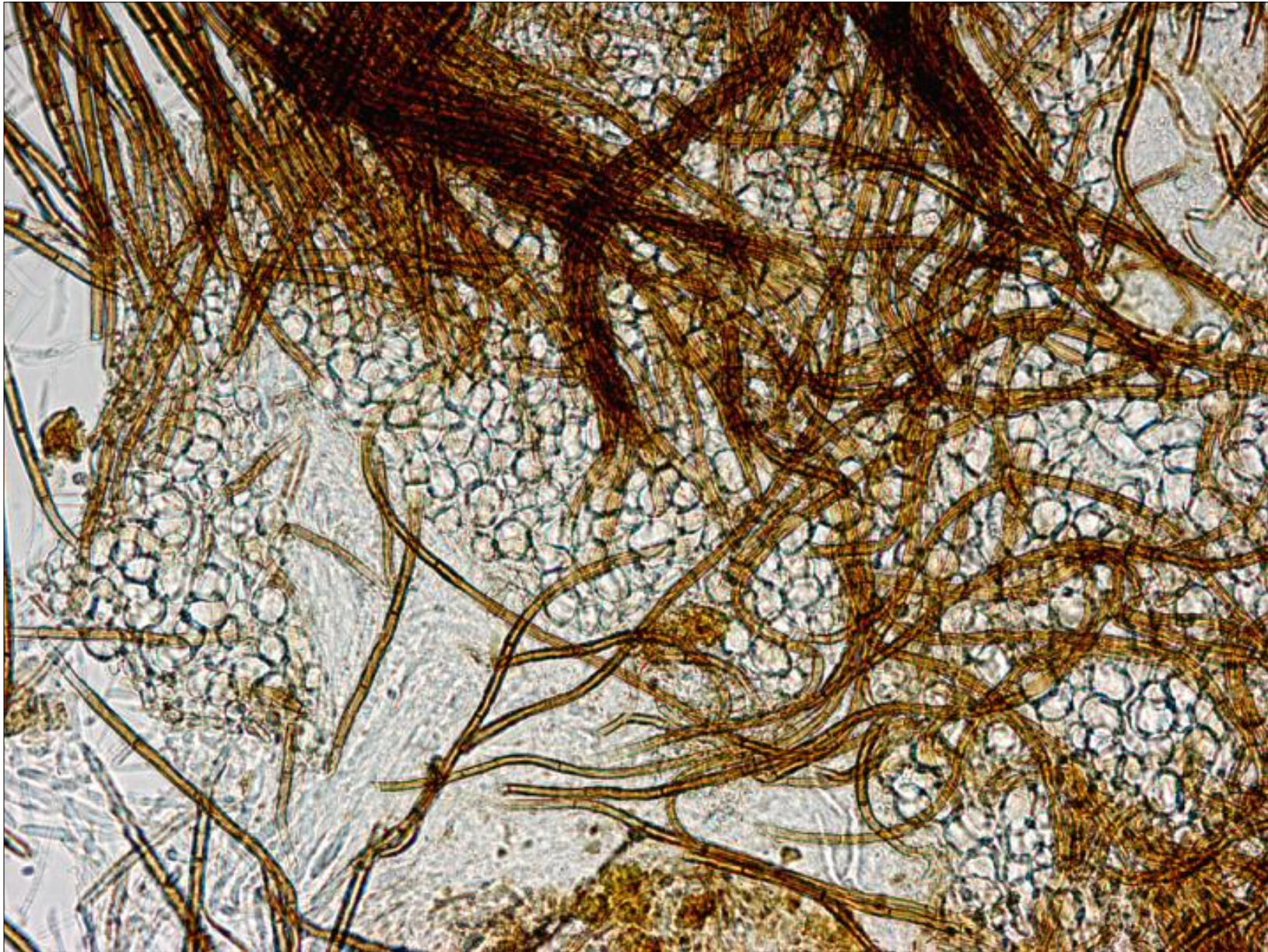
← 400 µm →



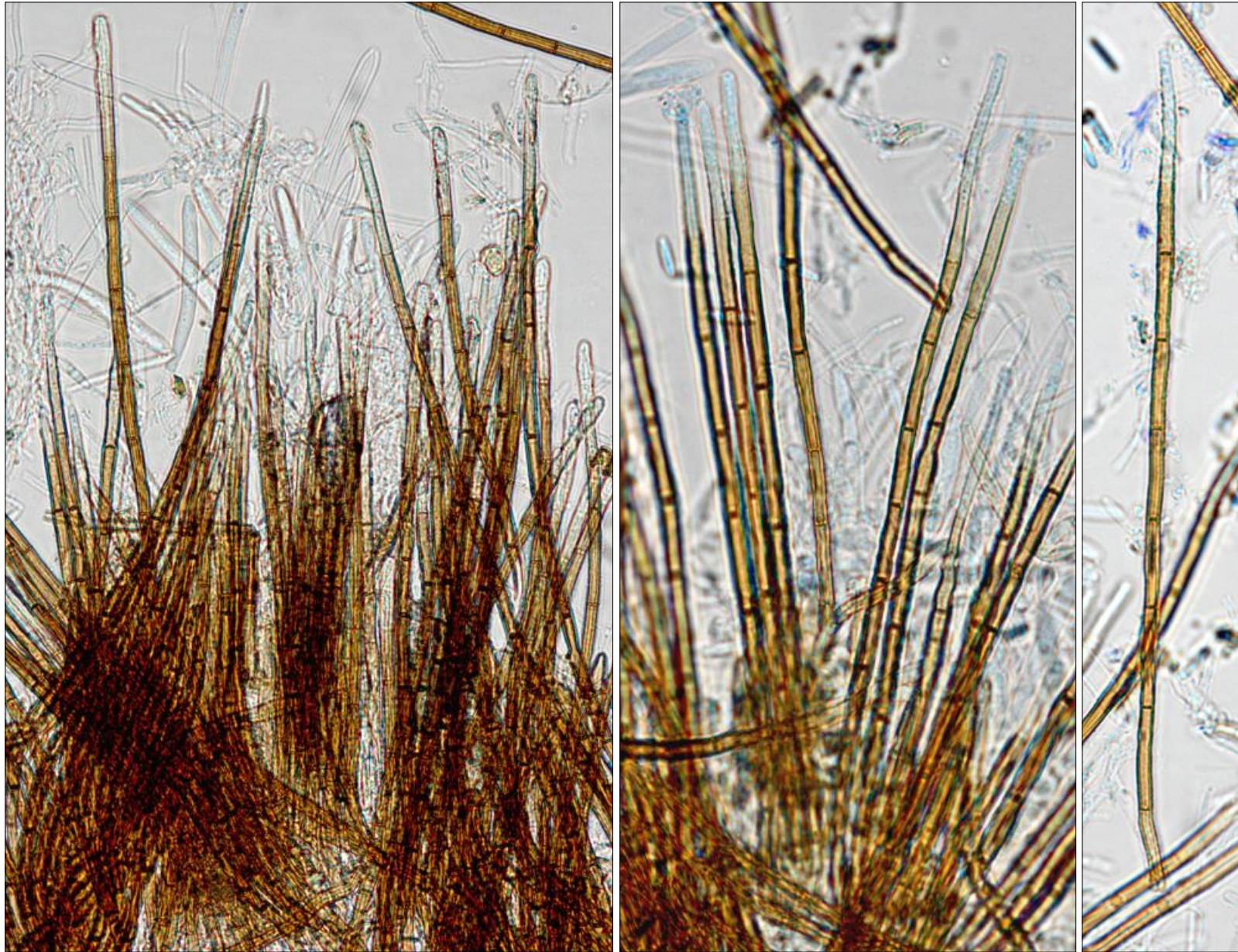
Side views of in situ apothecia. See the comments on page 1 that speak to photos taken on 20 September. In this photo the lower humidity resulted in the partial closing of apothecia and the absence of liquid droplets seen in the fresh collection. In the left photo note also: 1) the receptacle rim hairs with their apical pasty remnants of early liquid droplets and 2) the tangle of wavy hairs covering mid and lower portions of the receptacle.



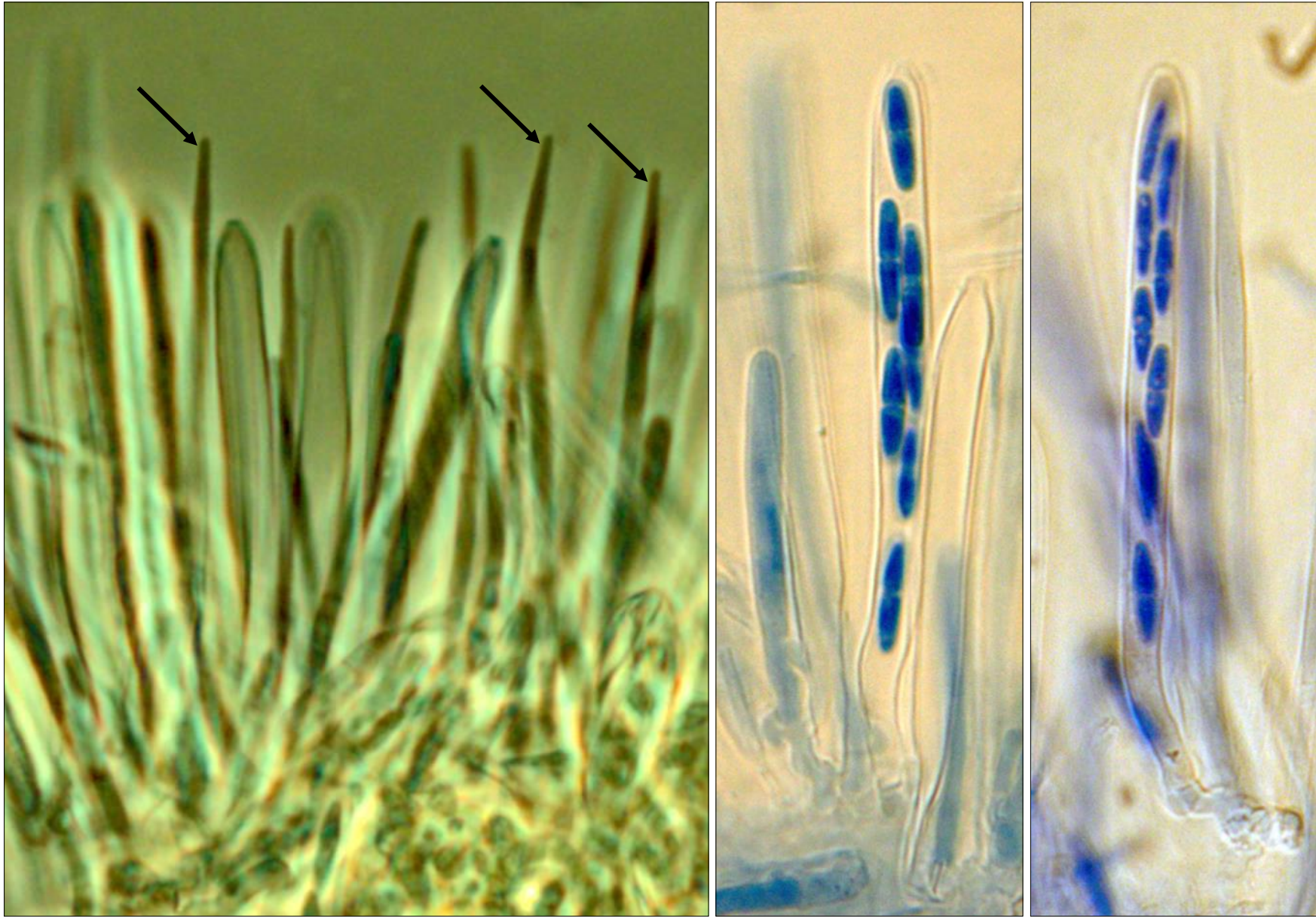
***Lasiobelonium variegatum*. Upside down apothecium, note central substrate attachment point and hairs. Melzer's reagent, 20X objective, brightfield microscopy.**



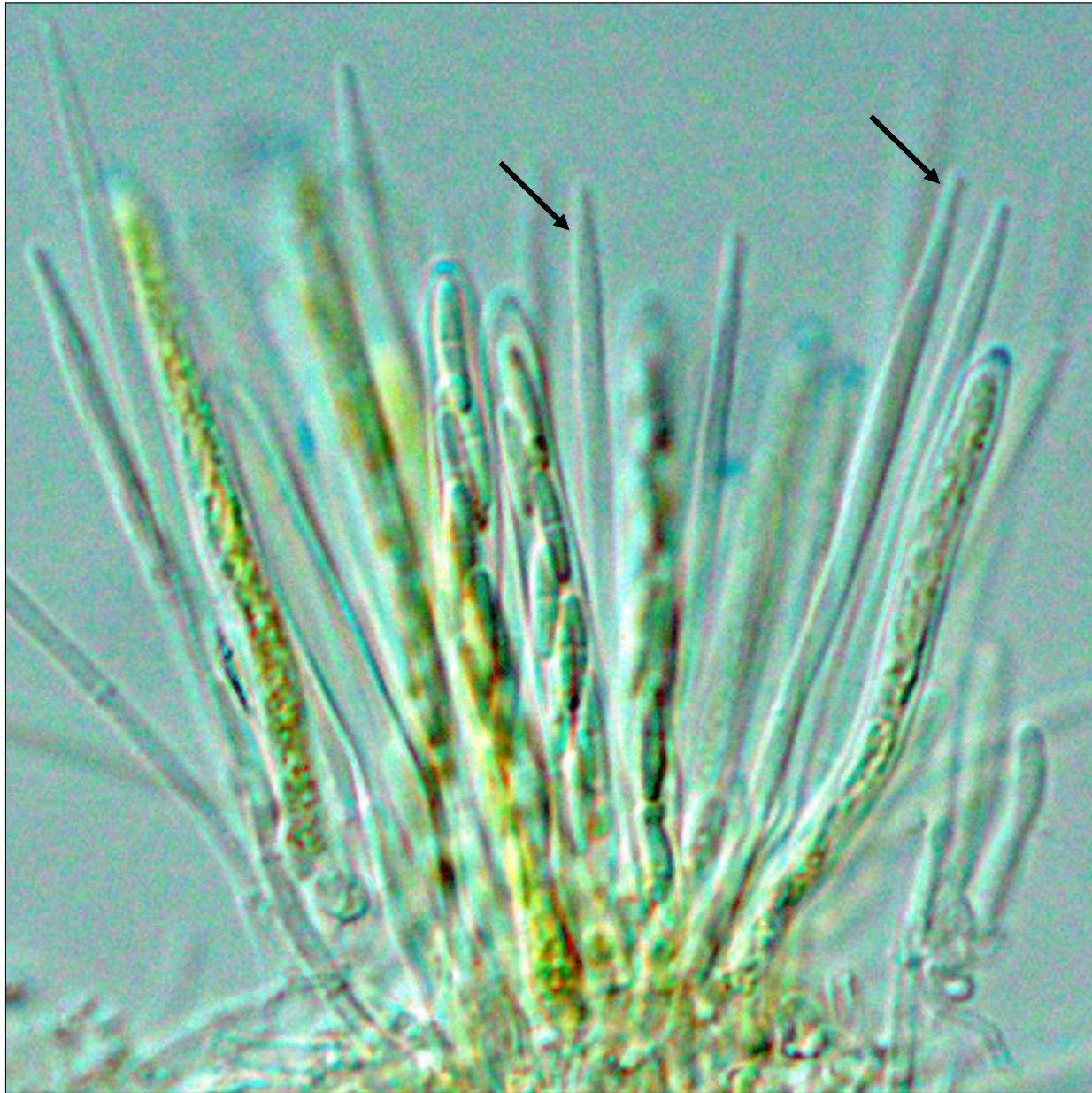
***Lasiobelonium variegatum*. Lower portion of ectal excipulum with textura globosa and long pigmented hairs Water mount, 40X objective, brightfield microscopy.**



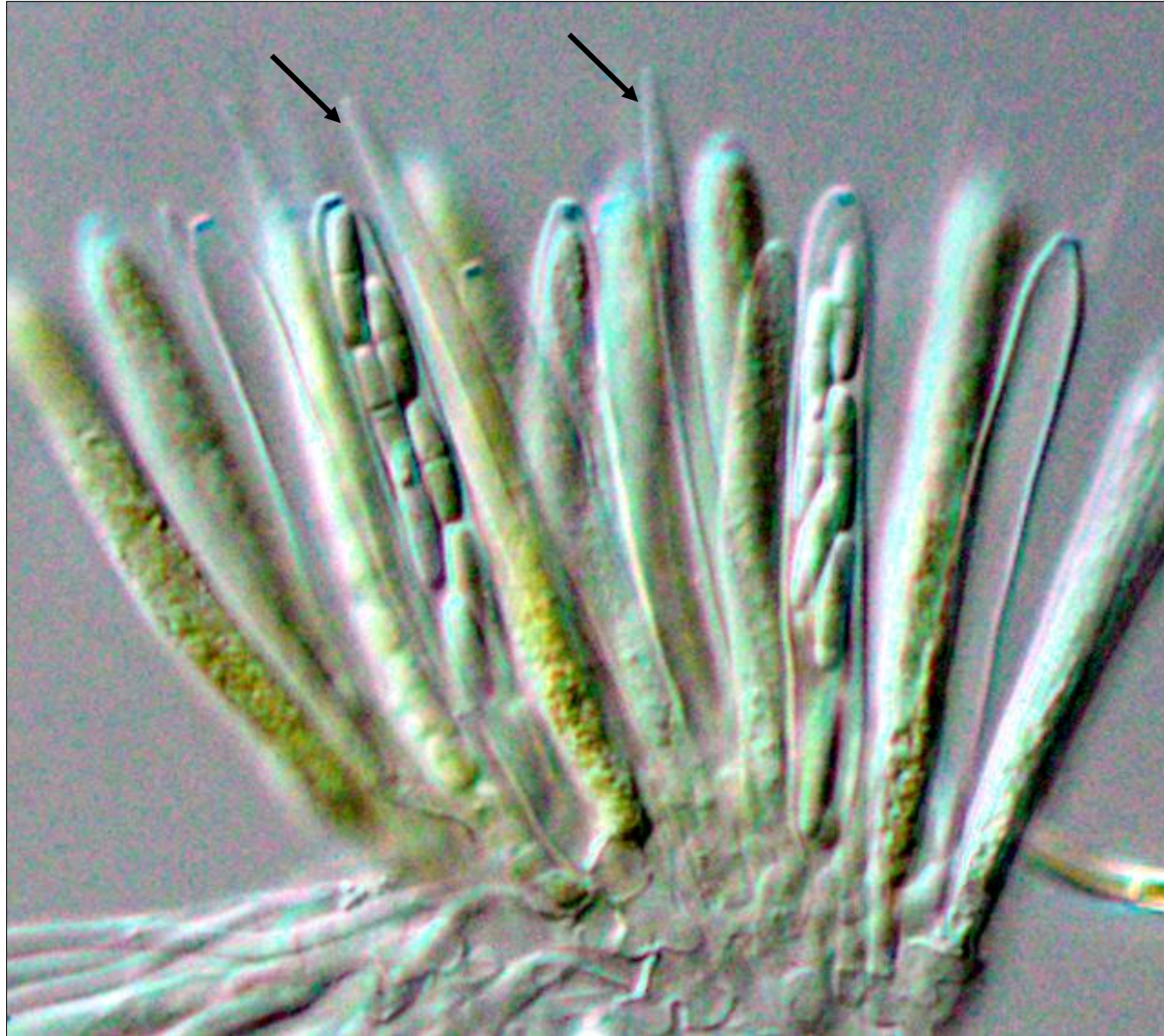
Lasiobelonium variegatum. All photos from uppermost portion of ectal excipulum along the receptacle rim – showing the pigmented, apically hyaline hairs. Brightfield microscopy, 40X objective – left photo water, others aniline blue lactic acid/SMF.



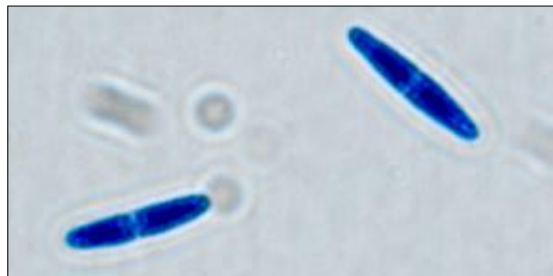
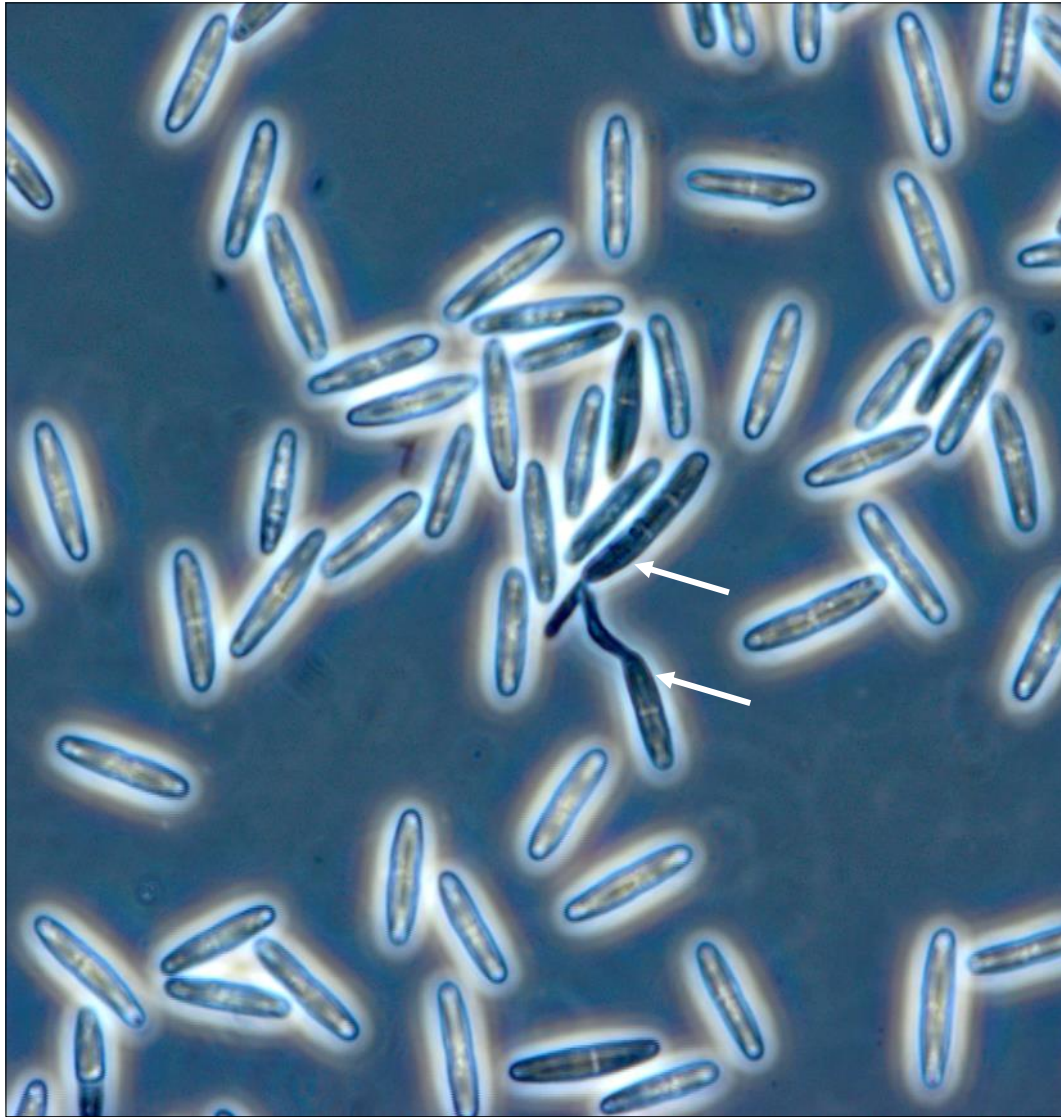
Lasiobelonium variegatum. Hymenial squashes. Left photo Melzer's, 40X objective, phase – note lanceolate paraphyses (arrowed) and faintly bluish ascus tips. Other photos aniline blue lactic acid, 100X objective, DIC – note asci with single-septate ascospores.



***Lasiobelonium variegatum*. Hymenial squash. Note lanceolate paraphyses (arrowed) and asci with faintly bluish ascus tips and single-septate ascospores. Melzer's reagent, 40X objective, DIC microscopy.**



Lasiobelonium variegatum. Hymenial squash. Note lanceolate paraphyses (arrowed) and asci with faintly bluish ascus tips and single-septate ascospores. Melzer's reagent, 40X objective, DIC microscopy.



Lasiobelonium variegatum. Ascospores, all 100X objective. Upper left photo water mount and phase – note germination (arrowed). Other photos aniline blue lactic acid; upper right phase, lower left brightfield.