

***Hypocrea* sp. AEB 1091 (= PDD 98335)** For a general introduction to *Hypocrea* see pp. 84–87 in “Rossman AY, Samuels GJ, Rogerson CT, Lowen R. 1999. Genera of Bionectriaceae, Hypocreaceae and Nectriaceae (Hypocreales, Ascomycetes). Stud. Mycol. 42:1–248.” As pointed out on page 86 “To characterize species in *Hypocrea*, it is essential to know the anamorph.” and “anamorphs have not been documented for most...species”. Cultures are essential. Therefore, with over 500 collections in the New Zealand Landcare herbarium and 515 records in CABI’s Funindex, the best we can do is provide a description with photos of our collection.

Substrate: rotten *Beilschmiedia tawa* log

Collection site: Lake Papaitonga, a regenerating lowland board-leaved dune slack/swamp forest, about 20 min N of Wai-kanāe off SH 1 at the end of Buller Road in the lakeside reserve

Collection date: 12 May 2009

Collector: Ann Bell

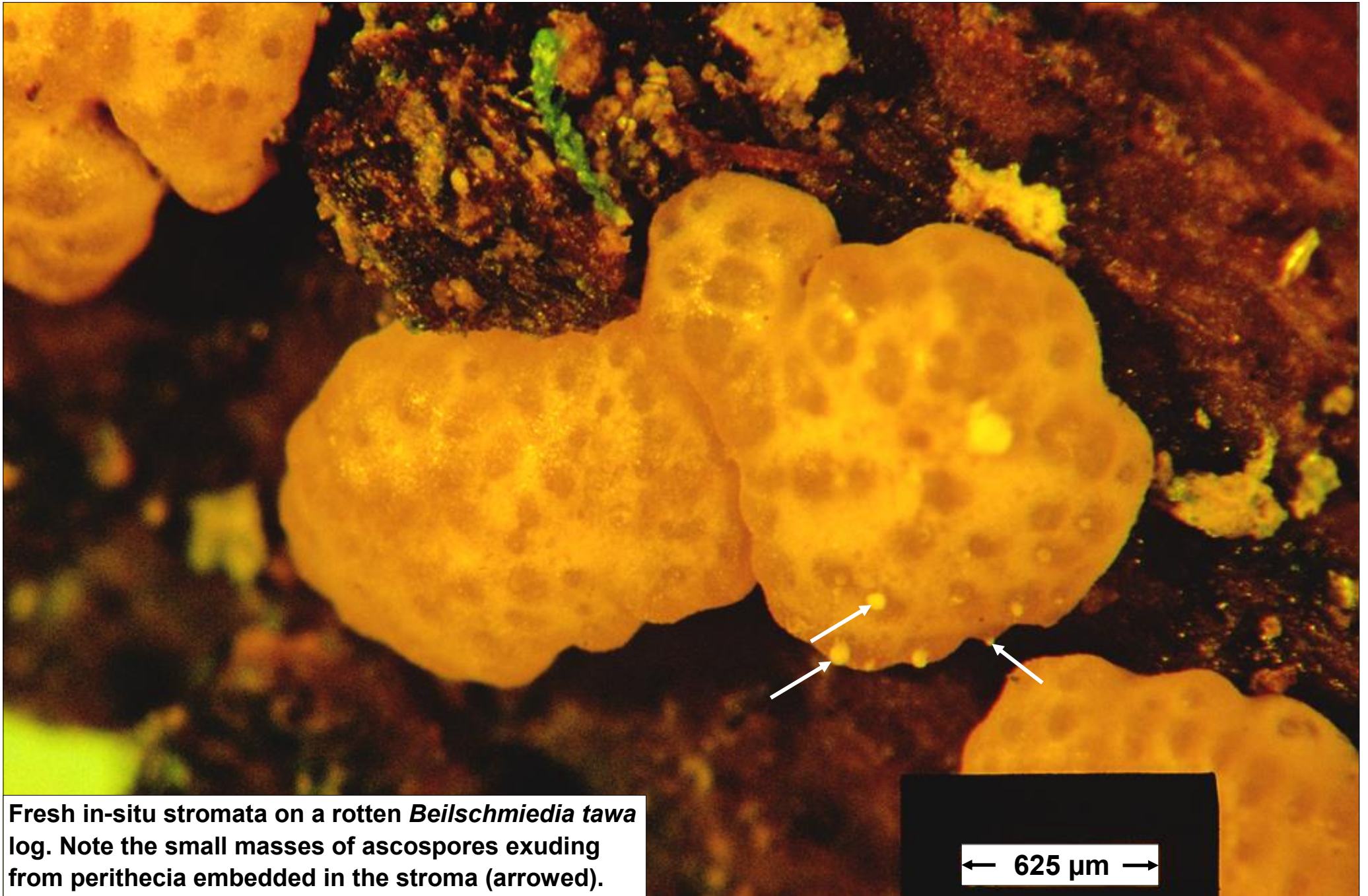
Identifier: Dan Mahoney

Voucher materials: a dried specimen AEB 1091 (= PDD 98335) accompanied by one Shear’s mounting fluid (SMF) slide; Ann’s notes; Dan’s two projection slides (digitized) of the fresh in-situ stromata (the 2nd of which shows ascospore discharge) and a number of his digital photos of the asci, ascospores and peridium/stromatic tissue from Ann’s SMF slide.

Brief description (from the fresh habit material and Ann’s SMF slide): **Stromata** of various sizes and shapes, yellow (becoming more dull orange with age), superficial, pulvinate, clustered, with the embedded perithecia exuding masses of ascospores through their small ostioles. **Stromatic tissue** orangish with cells in concentric rings of longitudinal cells (this is subject to further interpretation). **Perithecium outer peridium** a smaller-celled textura angularis; **middle peridium** a better-defined, larger-celled textura angularis; **inner peridium** very flattened, of large hyaline textura angularis cells. **Asci** cylindrical, with 16 uniseriately arranged ascospores which vary in shape (rectangular to round or ellipsoidal. Ascospore portions of the asci 56–65 × 3–4.5 μm (n=5). Ascus apex not clearly observed. **Free ascospores** hyaline, spinulose, globose to ellipsoid to somewhat irregular, mostly 3–5 × 3–4 μm.



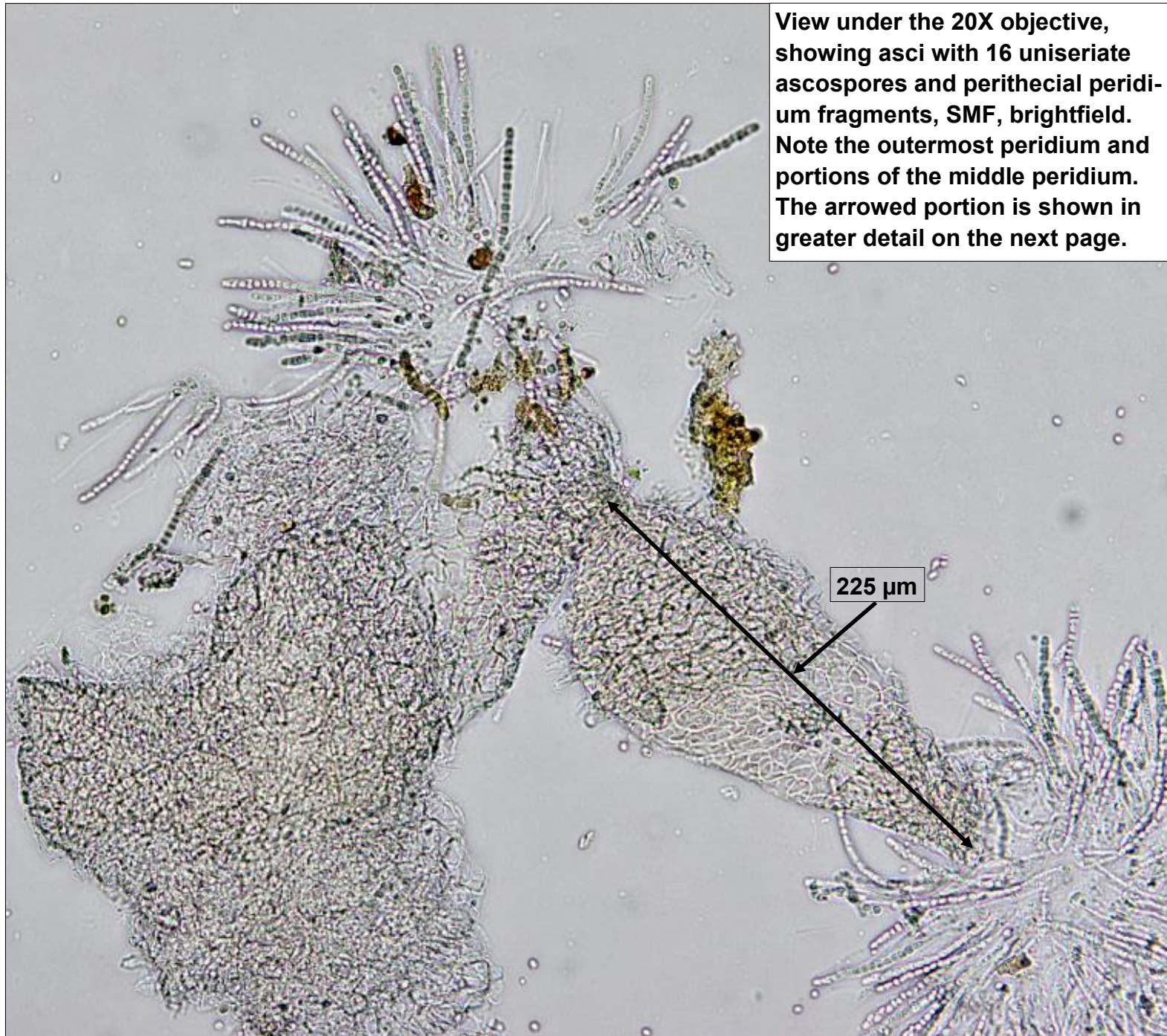
Fresh in-situ stromata on a rotten *Beilschmiedia tawa* log

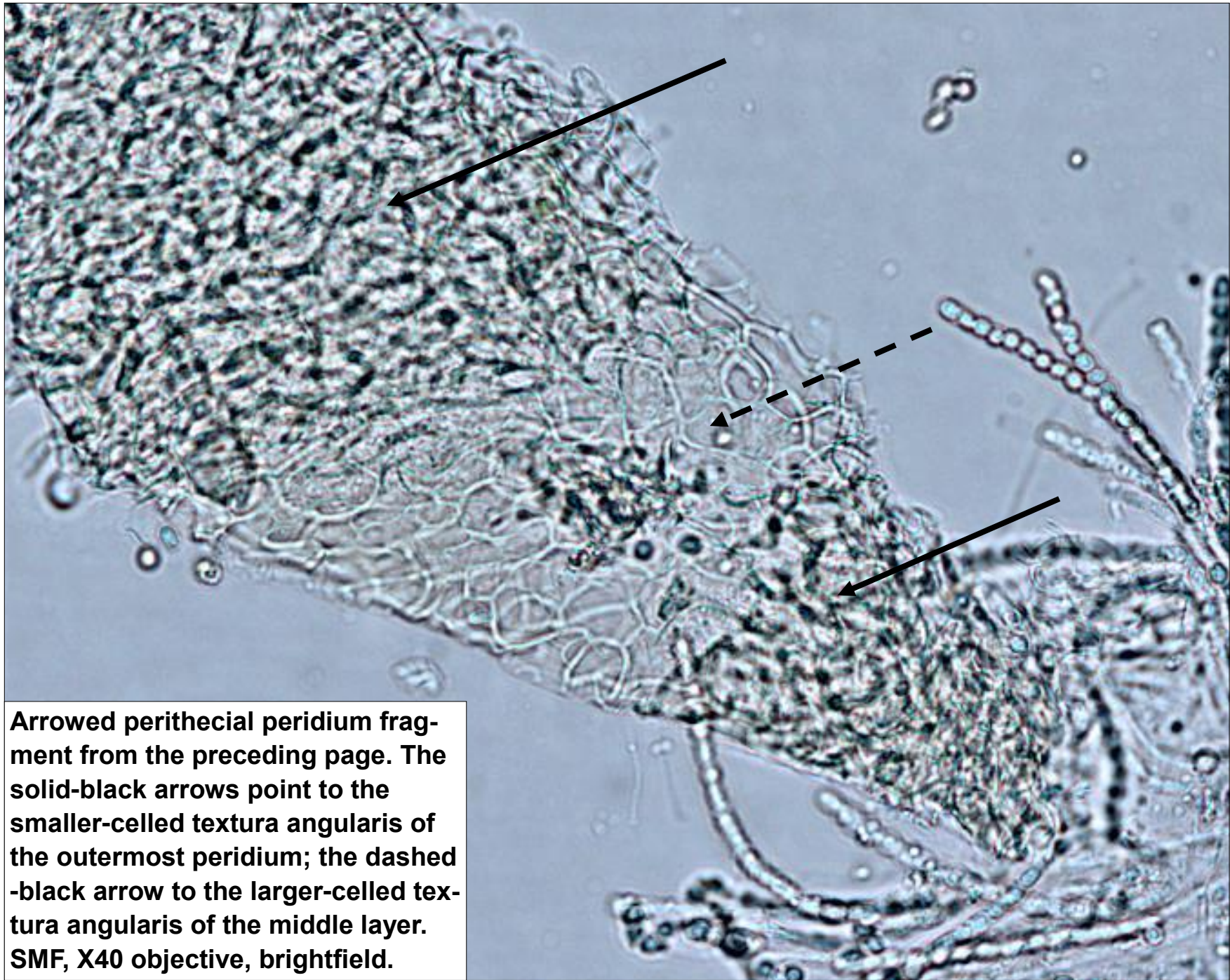


Fresh in-situ stromata on a rotten *Beilschmiedia tawa* log. Note the small masses of ascospores exuding from perithecia embedded in the stroma (arrowed).

← 625 μm →

View under the 20X objective, showing asci with 16 uniseriate ascospores and perithecial peridium fragments, SMF, brightfield. Note the outermost peridium and portions of the middle peridium. The arrowed portion is shown in greater detail on the next page.

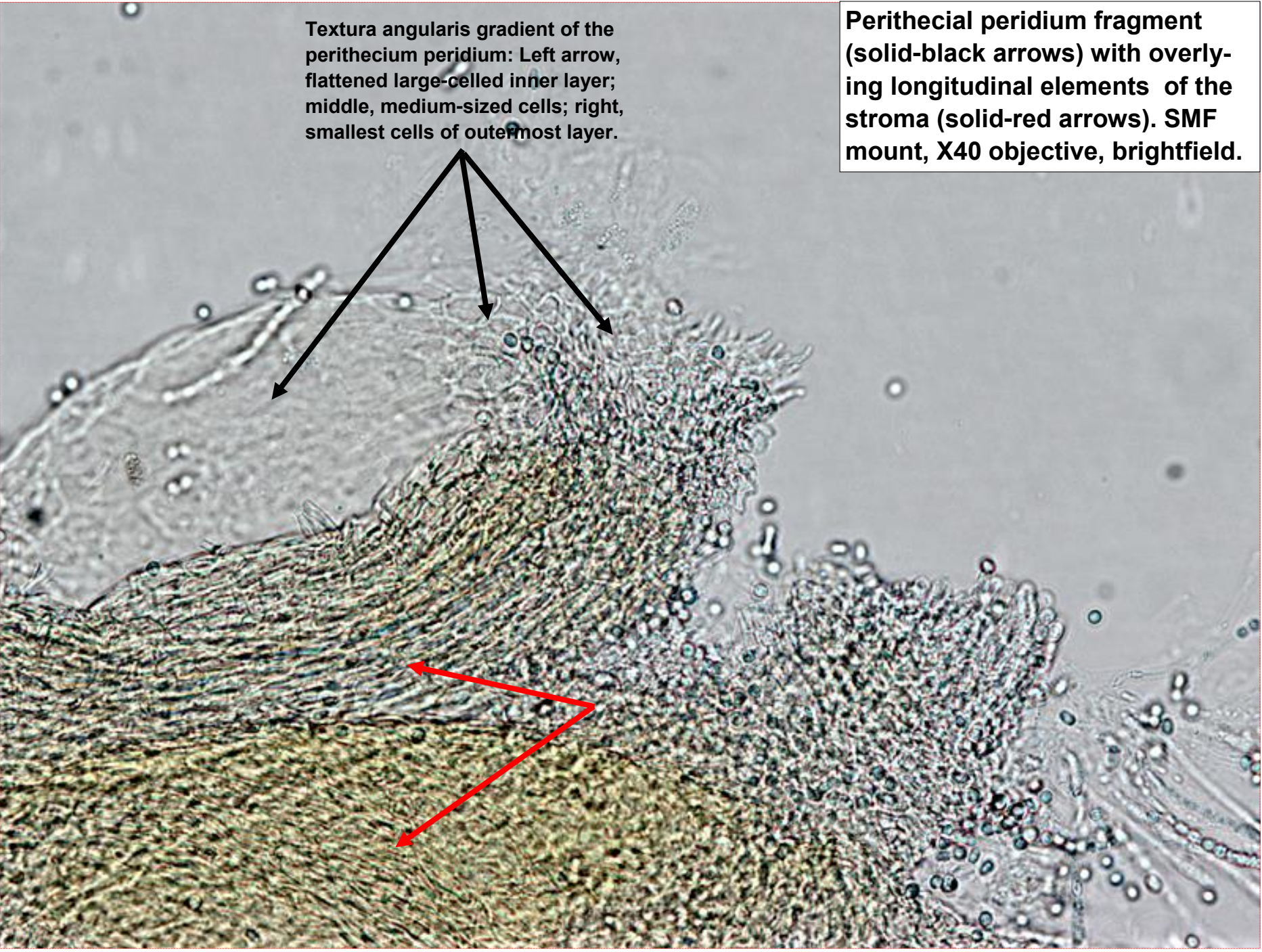




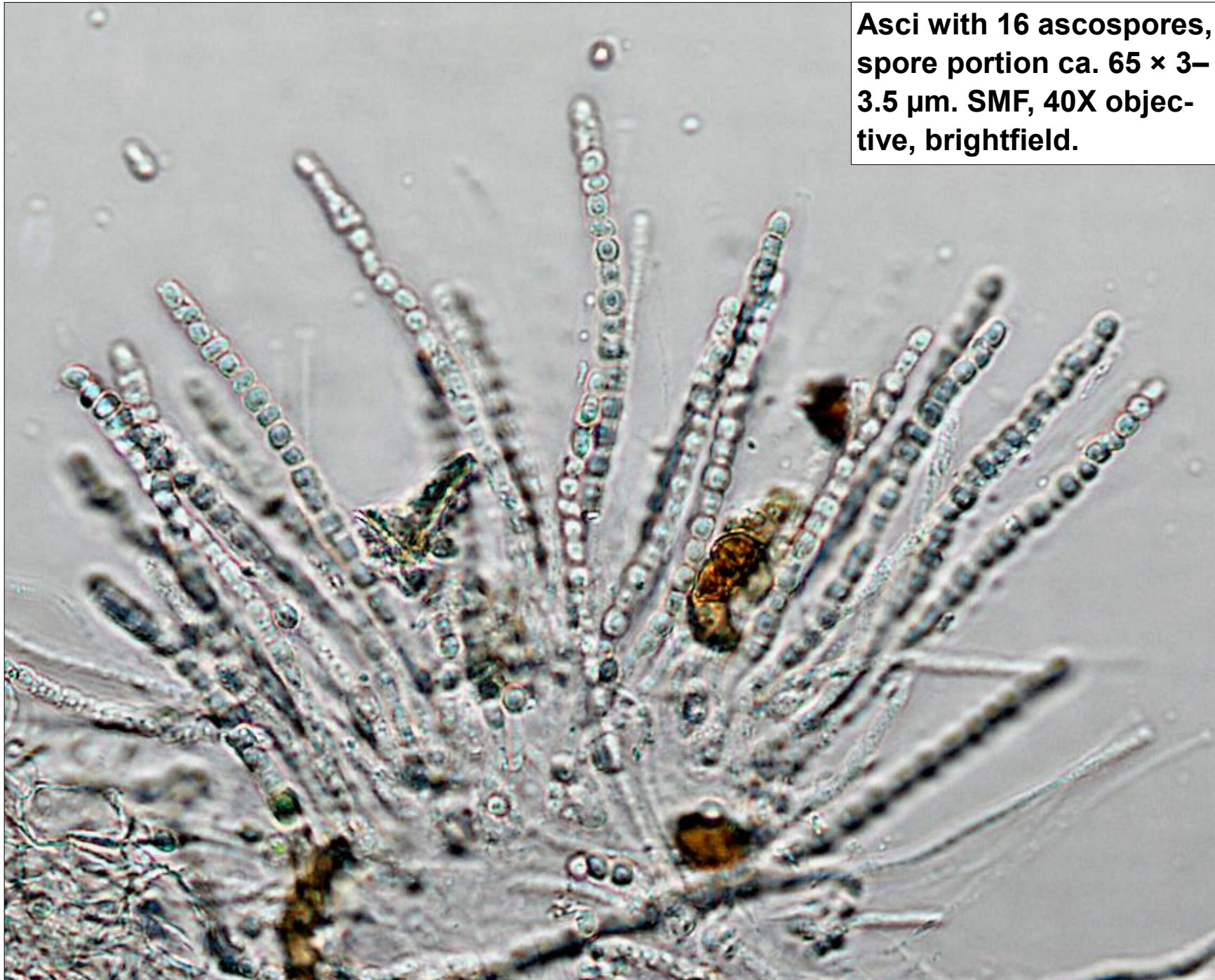
Arrowed perithecial peridium fragment from the preceding page. The solid-black arrows point to the smaller-celled textura angularis of the outermost peridium; the dashed-black arrow to the larger-celled textura angularis of the middle layer. SMF, X40 objective, brightfield.

Textura angularis gradient of the perithecium peridium: Left arrow, flattened large-celled inner layer; middle, medium-sized cells; right, smallest cells of outermost layer.

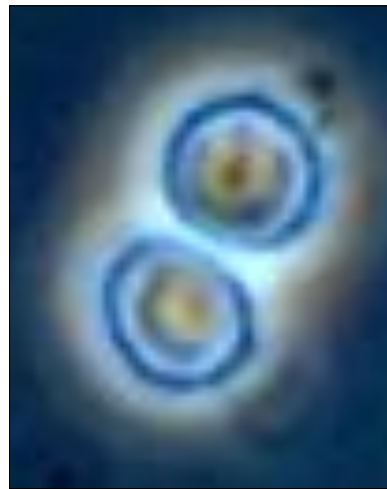
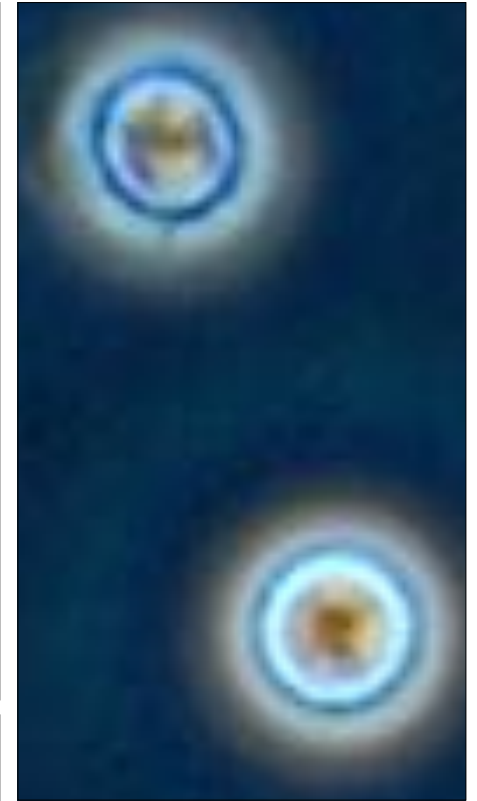
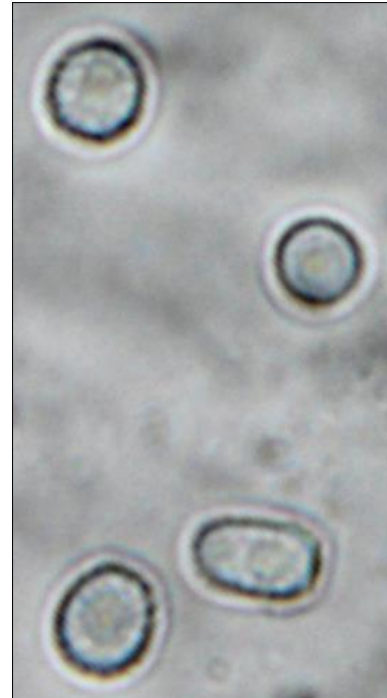
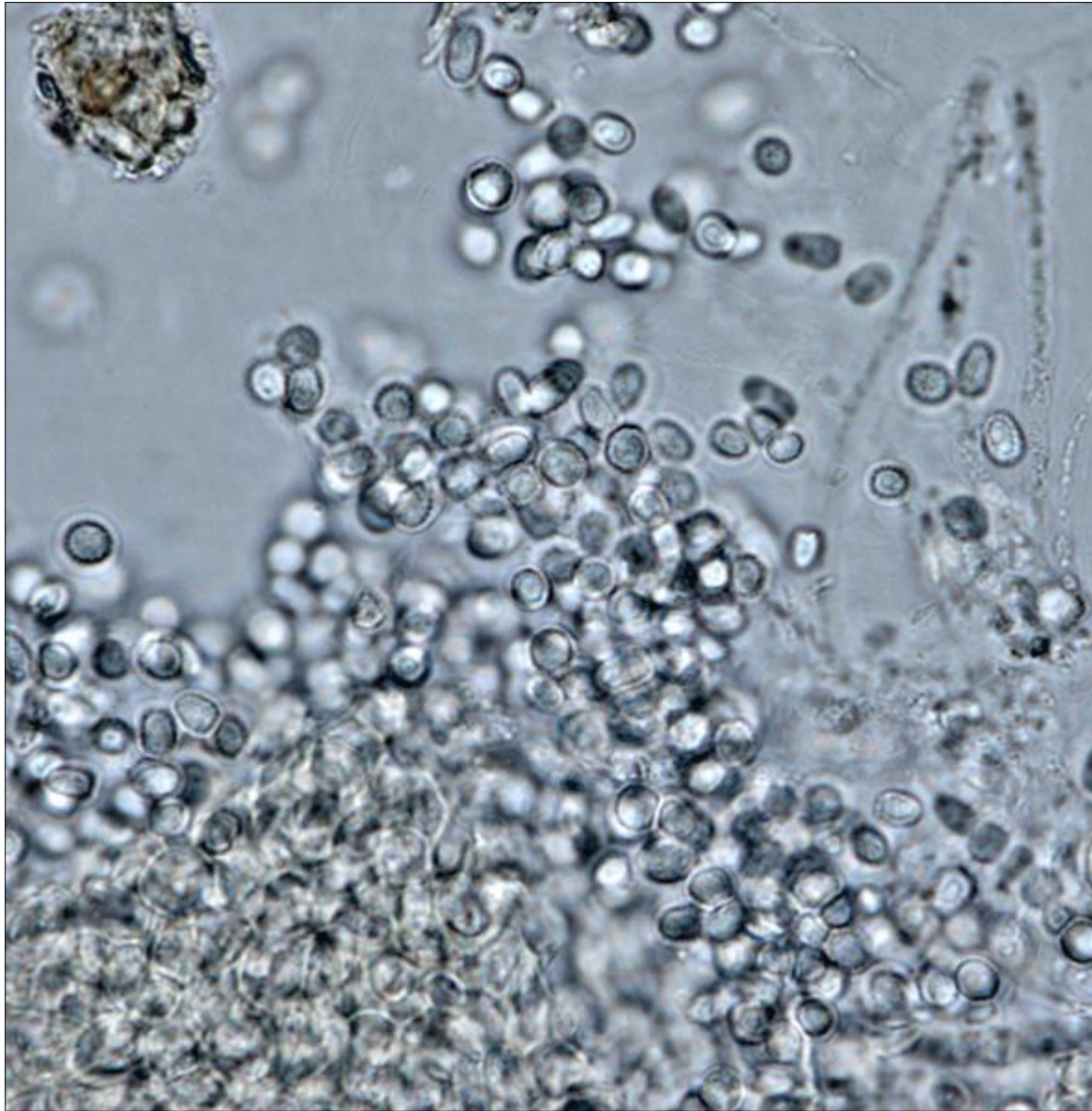
Perithecial peridium fragment (solid-black arrows) with overlying longitudinal elements of the stroma (solid-red arrows). SMF mount, X40 objective, brightfield.



**Asci with 16 ascospores,
spore portion ca. $65 \times 3\text{--}3.5 \mu\text{m}$. SMF, 40X objective,
brightfield.**



**Ascus on right with 16
ascospores, spore
portion $56 \times 4 \mu\text{m}$.
SMF, X100 objective,
phase microscopy.**



Spinulose, globose to ellipsoid ascospores ($3-5 \times 3-4 \mu\text{m}$) mounted in SMF and photographed under X100 objectives using brightfield and phase microscopy. Those seen at the right are variously enlarged.