

***Didymium squamulosum* (Alb. & Schwein.) Fr. SM62 (= PDD 110435) – keying nicely in Stephenson, S.L. 2003. Myxomycetes of New Zealand. Fungi of New Zealand. Volume 3. Fungal Diversity Research Series 11: 1–238. See also the same species [collection SM13 (= PDD 110393)] which was found on garden pea-straw mulch in 2005.**

Substrate: Dead unidentified decorticated wood. Nearly all sporangia were fruiting on a black resupinate xylariaceous stroma (perithecia seen embedded and slightly emergent from the stroma).

Collection site: Bush gully (Kelson, Lower Hutt)

Collection date: 28 July 2009

Collector: Ann Bell

Identifier: Dan Mahoney

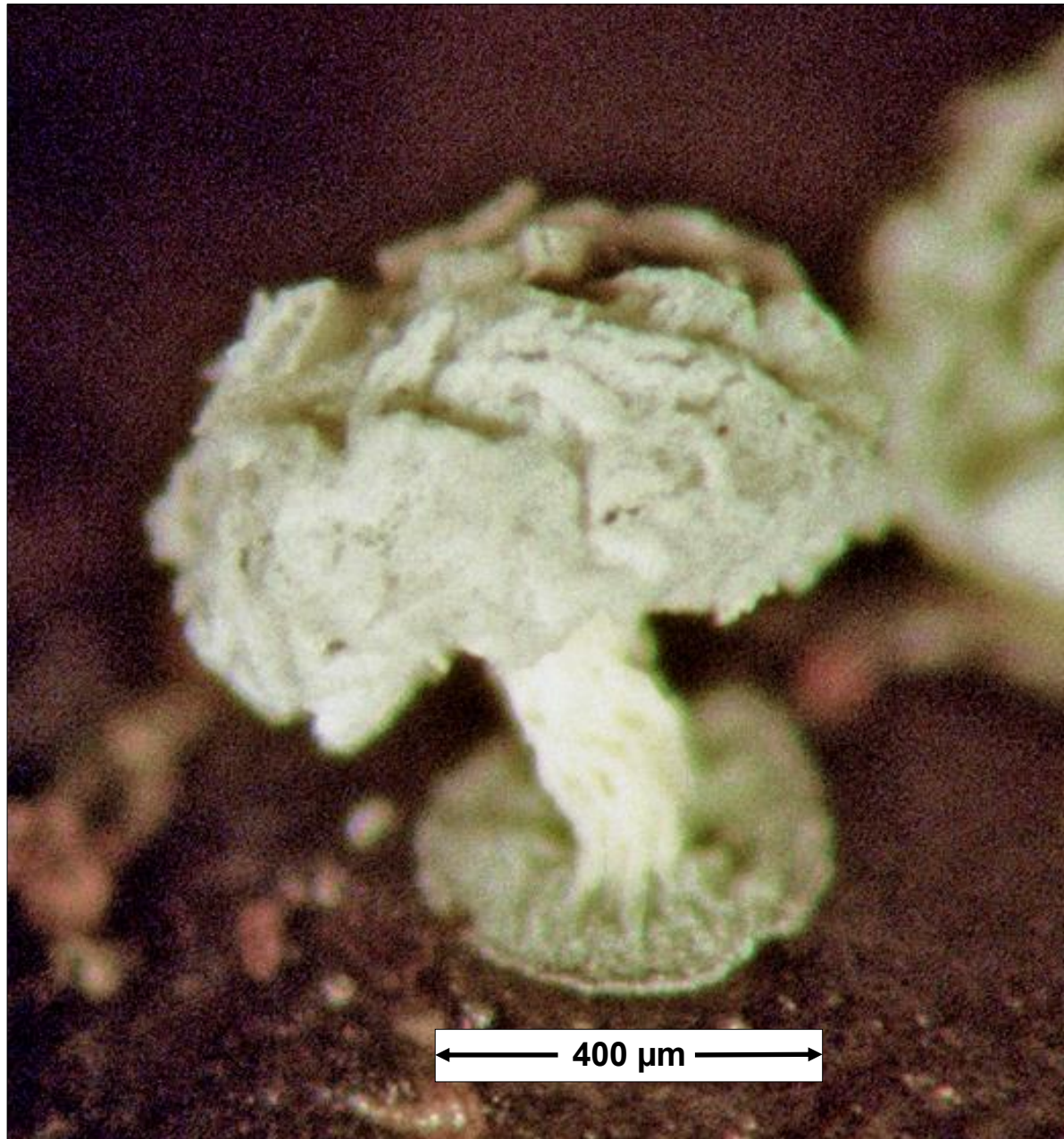
Voucher materials: dried herbarium material [SM62 (= PDD 110435)] accompanied by 2 Shear's mounting fluid (SMF) semi-permanent slide mounts; Dan's dissecting scope projection slides (best scanned) of fresh in situ fruiting bodies on the resupinate xylariaceous stroma and compound scope digitized photos of fruiting structure detail – crowded stellate calcareous crystals on the peridium, spores and capillitial threads (some in 70% EtOH to which water was then added and some in 70% EtOH to which SMF was added); Dan's description and comments.

Description and comments: <50 fruiting bodies. **Sporangia** globose (mostly 0.8-1.0 mm in diameter) but slightly dorsal-ventrally flattened, nearly sessile or with short stout stalks and a circular hypothallus at their base – these all covered with a coating of white stellate crystalline lime; **sporangial stalks** longitudinally ribbed (fluted); **lime** crystals very crowded, each large with stellate spinose extensions seen at the periphery of a largish central mass (larger and less well-defined than those seen in SM13), forming a reasonably thick crust of intertwining undulating folds (squamules) over the peridial surface (see in situ photos); **peridium** thin, hyaline membranaceous; the **umbilicate base of the sporangium** less obvious due to the positions of short-stalked sporangia on the substrate. **Columella** a small obvious white area at the apex of the stalk.

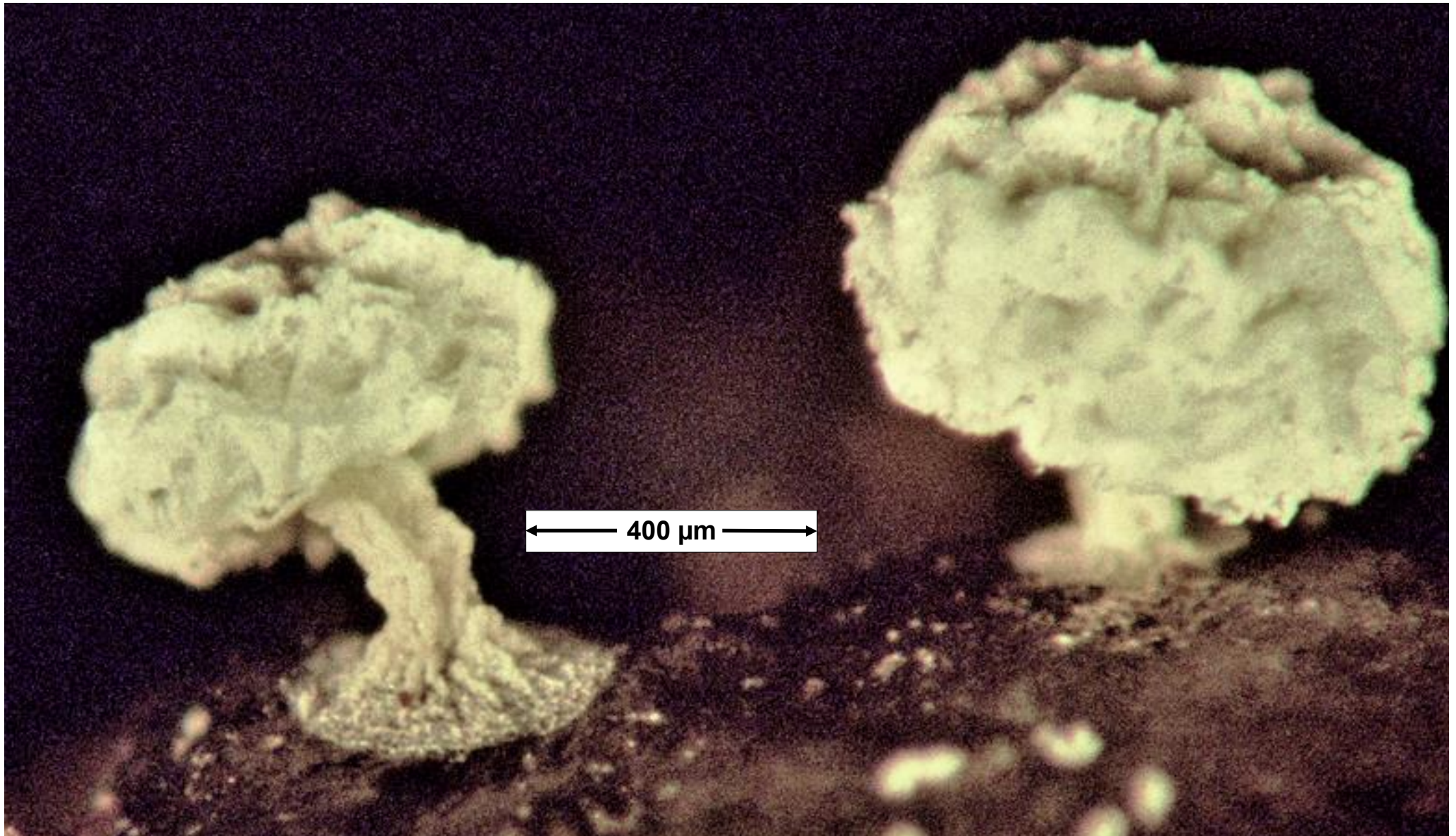
Capillitial threads abundant, especially in the columella region but less so elsewhere, limeless, thin, dichotomously branched and sometimes anastomosing (see digital photos) and without color except for brownish to brownish violet sub-globular to irregularly elongate swellings (nodes) along their length. **Spores** globose, spinose (more obviously spinose than those of SM13), purplish brown, moderately thick-walled, mostly 9-10 µm in diameter including the spinose ornamentation.



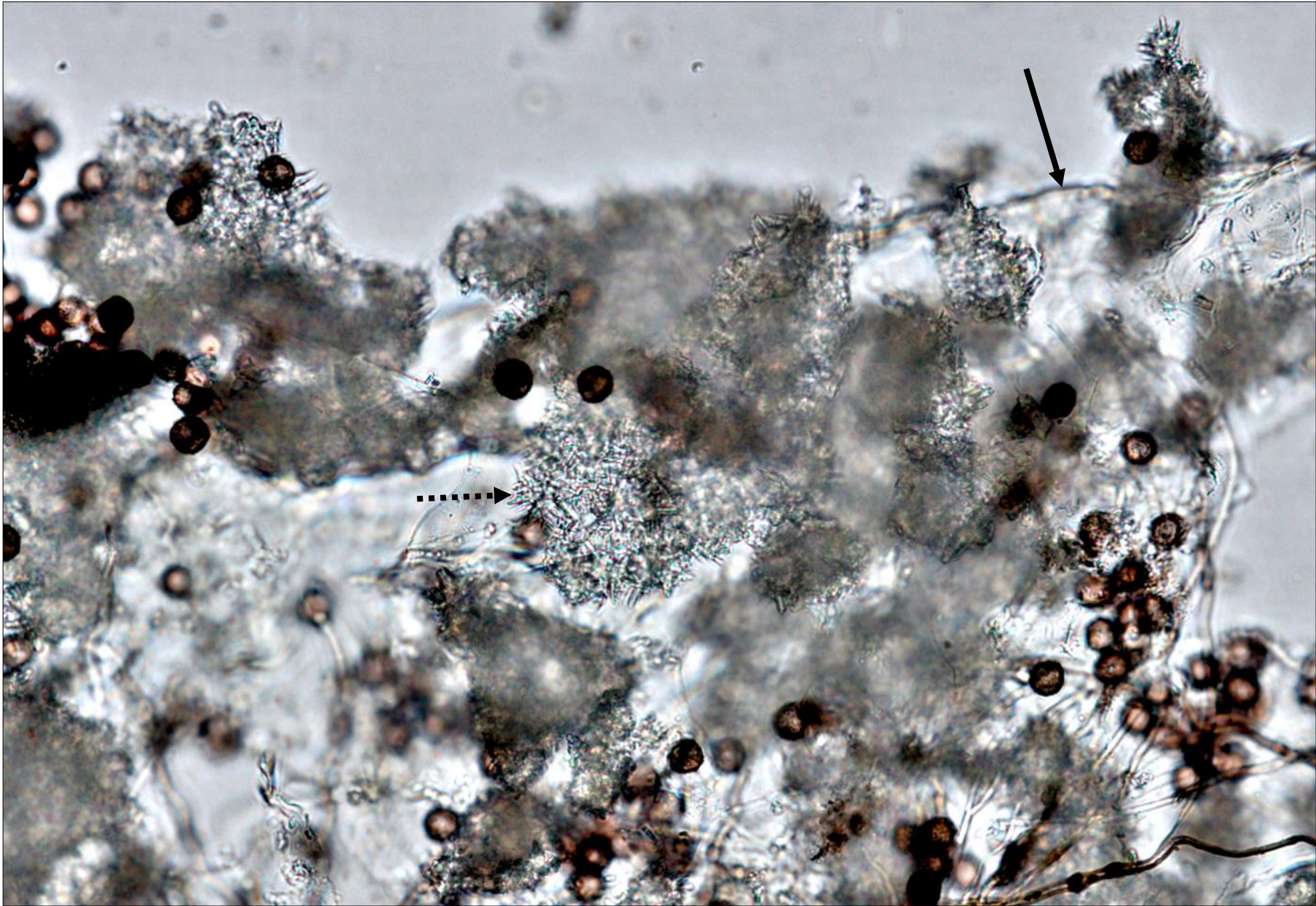
In situ mostly overhead views of white, stellate-crystalline-lime-covered fruiting bodies on a resupinate black xylariaceous stroma. Note the flaky (squamulose) peridium aspect that typifies this common morphological variant in the *Didymium squamulosum* 'species-complex'. See closeup of the arrowed fruiting body on the next page.



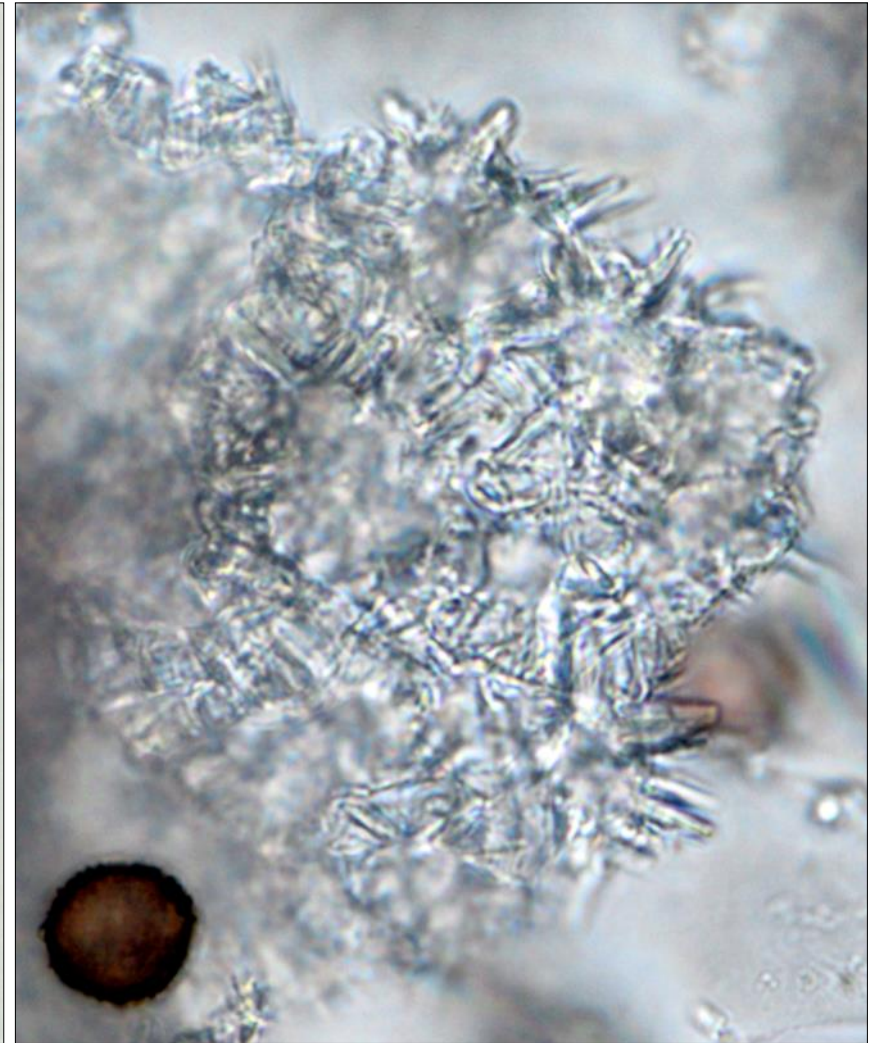
Fruiting body closeup from the previous page. White lime is evident in the flaky aspect of the sporangium peridium, in the fluting of the stalk and in the hypothallus where it appears on ridges that lead to stalk fluting and between them.



In situ side views of white, stellate-crystalline-lime-covered fruiting bodies. White lime is evident in the flaky aspect of the sporangium peridium, in the fluting of the stalk and in the hypothallus where it appears on ridges that lead to stalk fluting and between them.



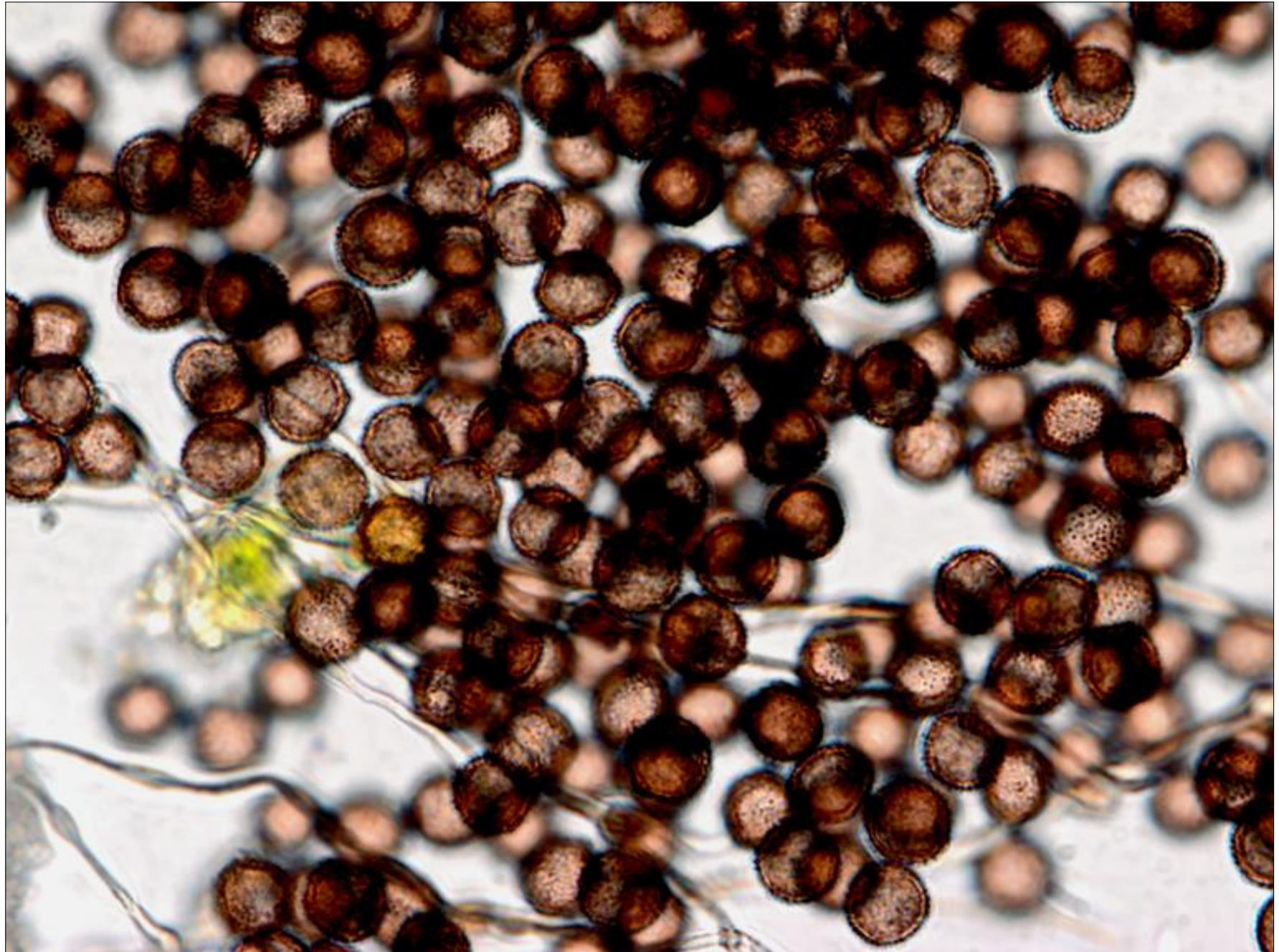
Sporangium-fragment squash to show broken pieces of the tight clusters of stellate lime crystals that form the squamules on the peridium surface. A solid black arrow points to the peridium; a dotted black arrow points to the crystal cluster enlarged on the next page. 70% EtOH irrigated with SMF, 40X objective, brightfield microscopy.



Left photo. Capillitial threads, thin, often zig-zag, dichotomously branched (sometimes anastomosing), hyaline to pallid but with periodic subspherical to elongate or irregular pigmented nodes (dotted arrows). Note also the thin hyaline membranaceous peridium (solid arrow). 70% EtOH irrigated with SMF, 40X objective, brightfield microscopy. Right photo. Cluster of crowded stellate crystalline lime bodies from the surface of the peridium. An earlier collection of *D. squamulosum* [PDD 110393 (= SM13)] had fewer more discrete, separate stellate crystals. 70% EtOH irrigated with SMF, 100X objective, brightfield microscopy.



Spores globose, spinose (more obviously spinose than those of collection SM13), purplish brown, moderately thick-walled, mostly 9-10 μ m in diameter including the spinose ornamentation. 70% EtOH mount, 100X objective, brightfield microscopy.



Another field of spores. 70% EtOH mount, 100X objective, brightfield microscopy.