

***Physarum pusillum* (Berk. & M.A. Curtis) G. Lister – AEB SM9 (= PDD 110389) A good match**
For published descriptions see Lister (1925), Martin & Alexopoulos (1969) and Stephenson (2003)

Substrate: Black-footed rock wallaby (*Petrogala lateralis*) dung; Australian dung collection #A193

Collection site: Australia, MacDonnell Range near Alice Springs in southern Northern Territory), Simpson's Gap

Collection date: 12 October 1997

Collector: C. A. Pearce

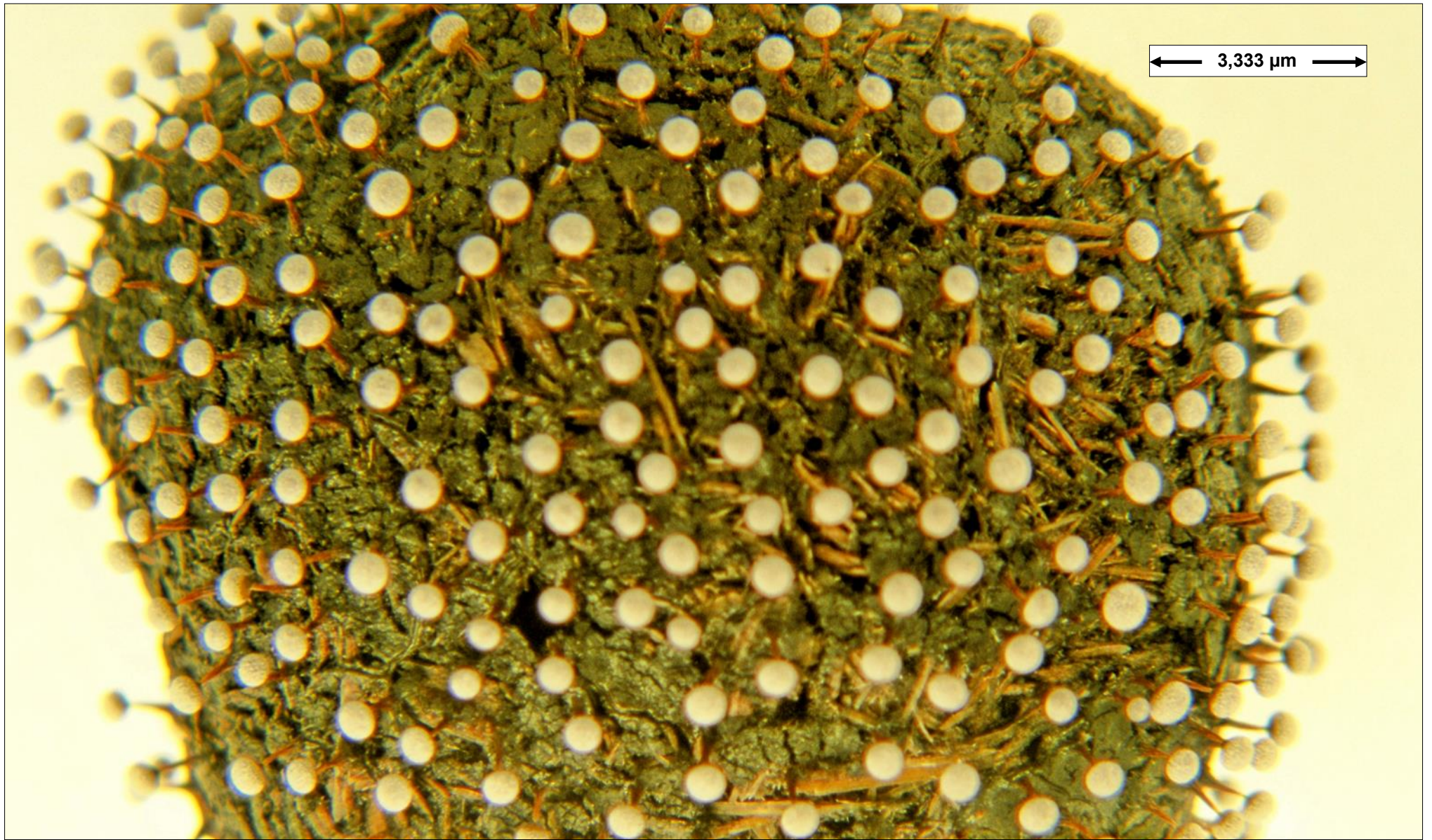
Dung incubation: in moist chamber by Ann Bell on 15 October 1998 and again on 23 June 1999

Identifier: Dan Mahoney

Voucher materials: dried herbarium material accompanied by Shear's mounting fluid (SMF) semi-permanent microscope slides; Dan's dissecting scope photos of in-situ fruiting bodies (digitized) and his compound scope digital photos of microscopic detail; description and comments.

Description: **Stipitate sporangia** 1–2 mm in total height, evenly spaced over the entire visible surface of one dung pellet – and irregularly so on several others, also on the filter paper and on the side walls of the glass dung-incubation container (a few of the latter almost sessile). **Sporangia** at first blue black but changing rapidly to white or greyish-white as the moist-chamber-lid was removed and drying occurred (<5 minutes), measurements mostly in the upper portion of the described range (0.4–0.6 mm) or even slightly larger, varying from globose to slightly flattened with a brown, persistent, shallow calyculus; **peridium** thin, clear, breaking easily and irregularly (except for the more persistent calyculus), with numerous small interconnected patches of white lime on its surface – these lacking on the brown basal calyculus. **Sporangiophores** reddish brown, limeless, tapering from base to apex; consisting of furrowed, twisting longitudinal fibrillose elements – these elements extending above the sporangiophore 'into or near' the calyculus peridium. **Columella** none. **Capillitium** composed of angular or irregularly shaped, yellow lime nodes with narrow hyaline limeless interconnections. **Spores** blue black in mass, violaceous brown by transmitted light, globose, minutely warted but often appearing smooth, 11–12(–14) µm [described as (9–)10–12 µm by Martin and Alexopoulos (1969)].

Comments: Nicely fitting *Physarum pusillum* but with sporangia and spores in the upper portions of their described ranges and with yellow, rather than white, lime nodes in the capillitium.



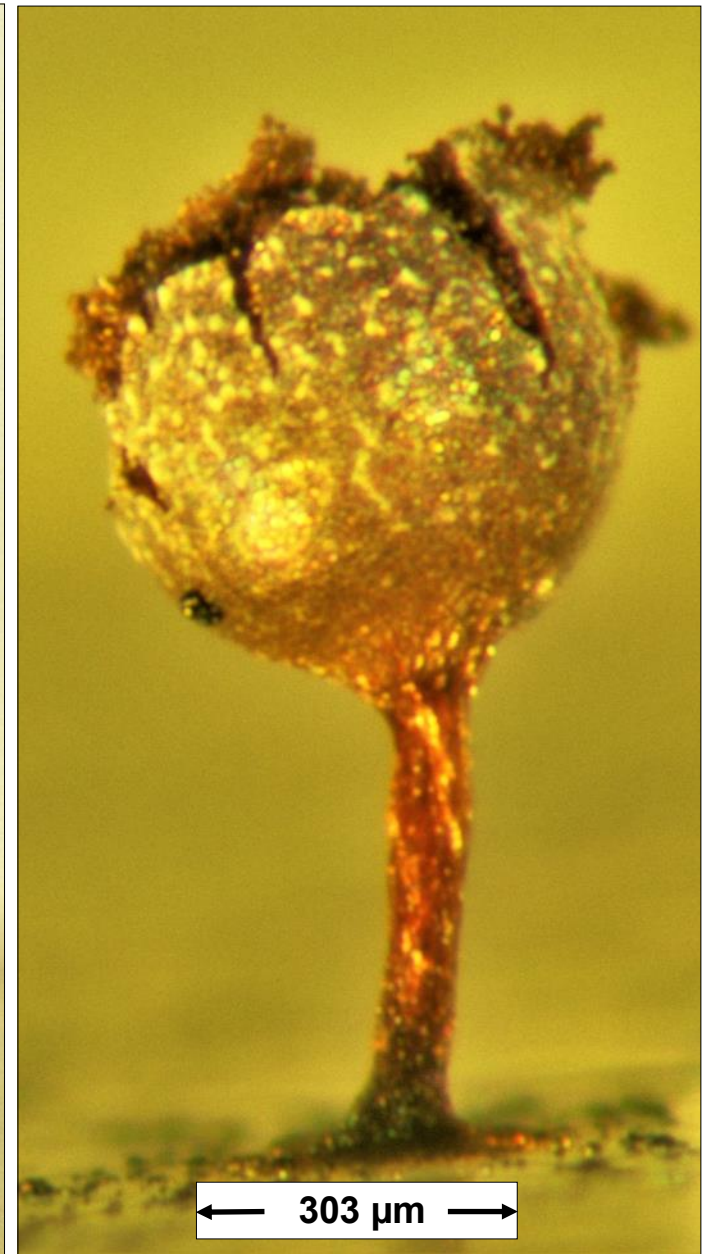
In-situ view of numerous evenly-spaced fruiting bodies on a pellet of black-footed rock wallaby dung.



Another in-situ view of numerous evenly-spaced fruiting bodies on a pellet of black-footed rock wallaby dung.



More in-situ views
of numerous even-
ly-spaced fruiting
bodies on pellets
of black-footed
rock wallaby dung.



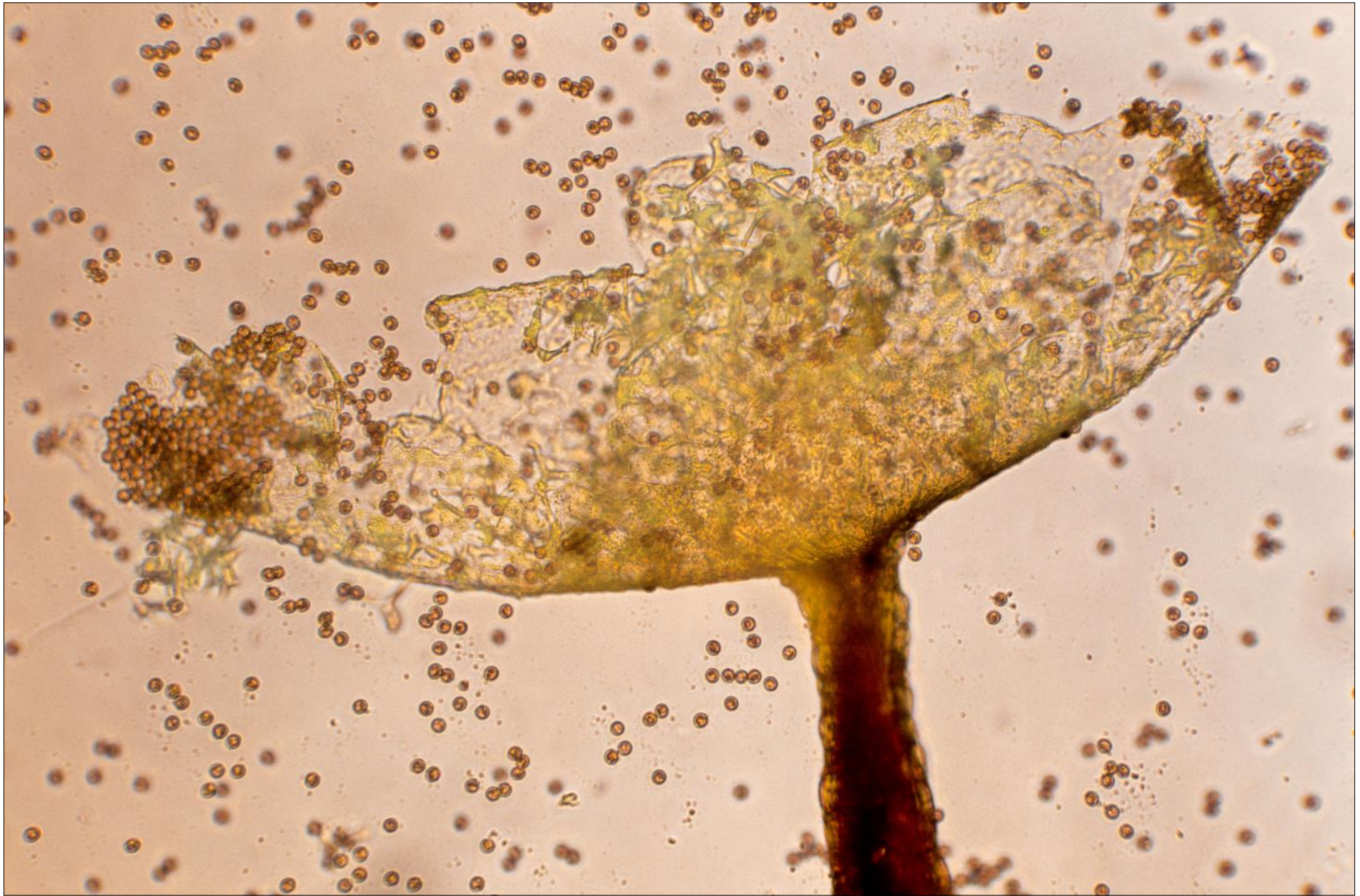
Closeup in-situ side views of individual fruiting bodies on black-footed rock wallaby dung. Left & center photos: sporangium intact, with center sporangium showing its basal calyculus. Far right photo: calyculus fully intact with peridium of upper sporangium splitting irregularly to expose the spores.



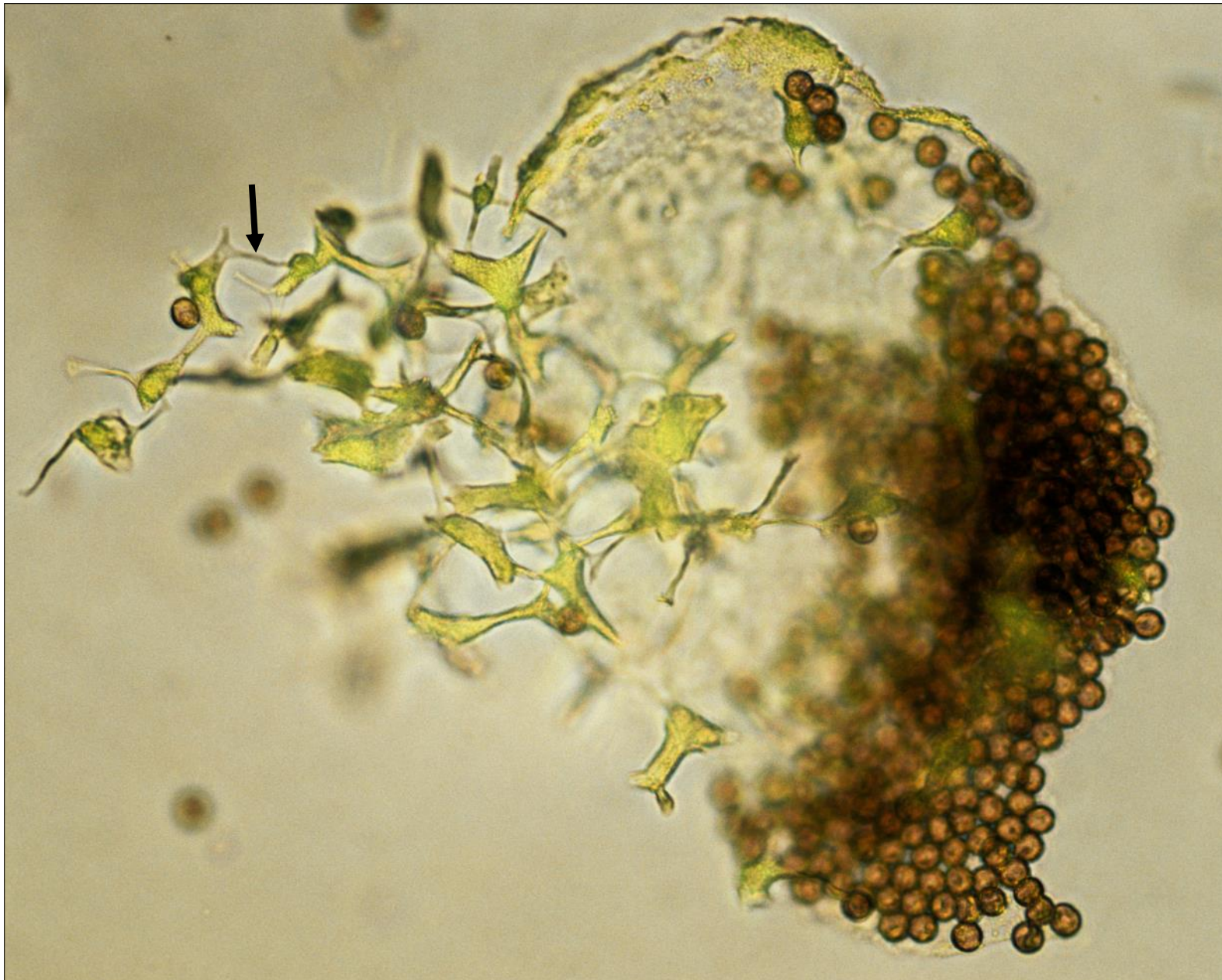
Overhead in-situ view of *Physarum pusillum* fruiting bodies on filter paper within the moist chamber where pellets of black-footed rock wallaby dung were incubating.



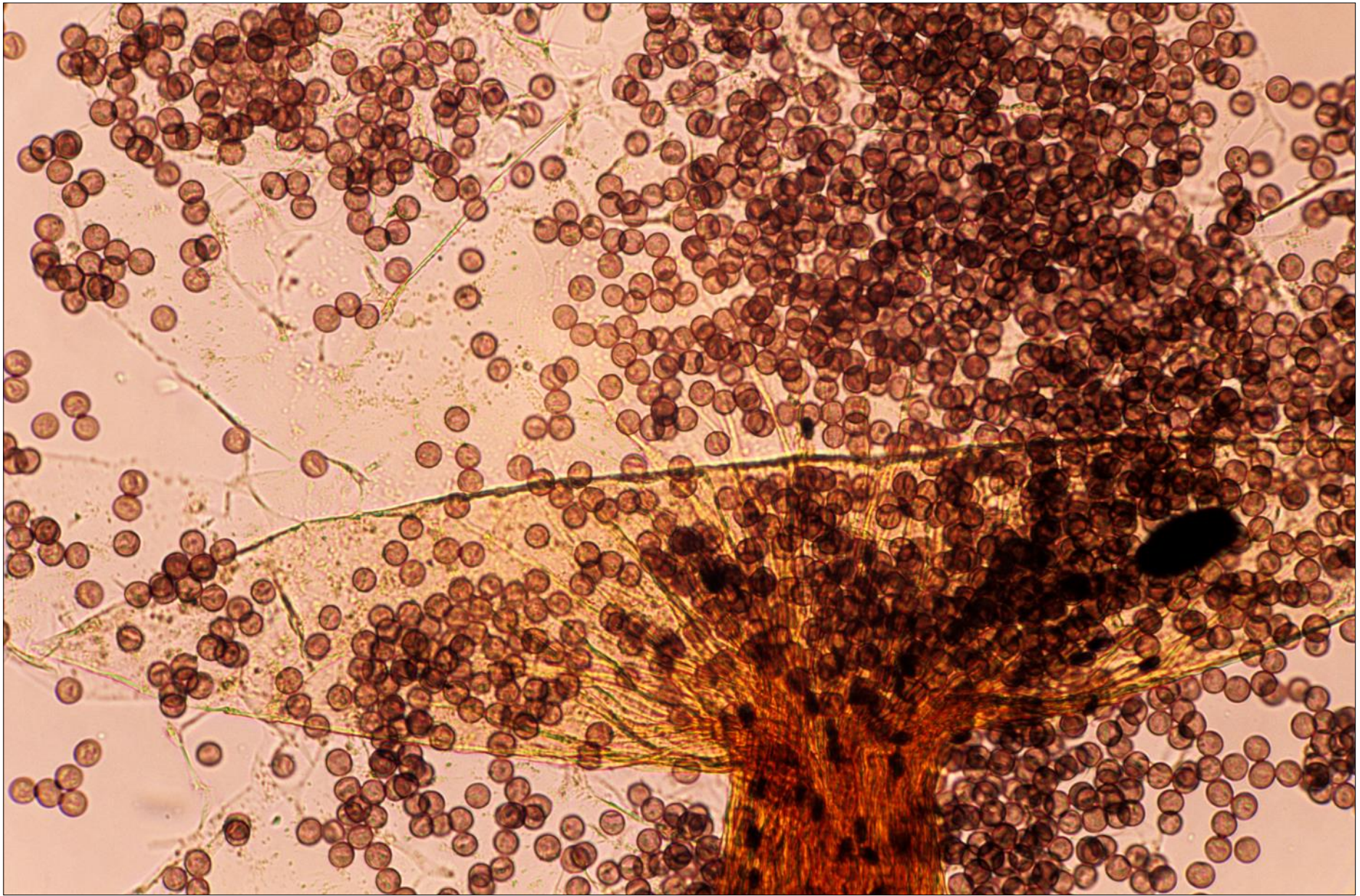
In-situ closeup photo of 3 re-oriented fruiting bodies from the previous page.



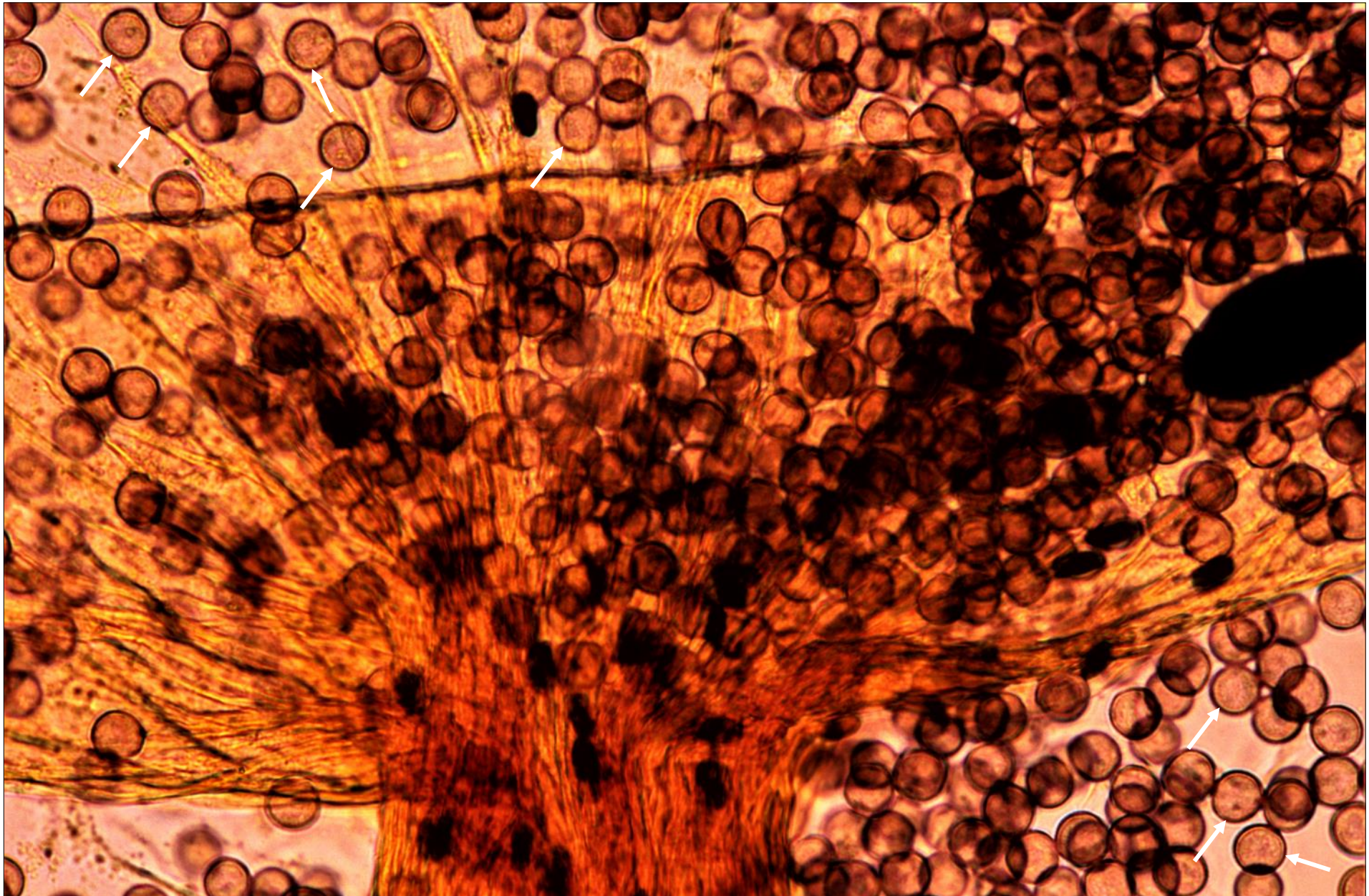
A squashed sporangium from a fresh fruiting body removed from the incubating black-footed rock wallaby dung, showing the persistent shallow calyculus and yellow capillitial lime nodes. Photo taken from a 70% EtOH + water mount under the X10 objective (enlarged). The yellow capillitial lime nodes are shown under higher magnification on the next page.



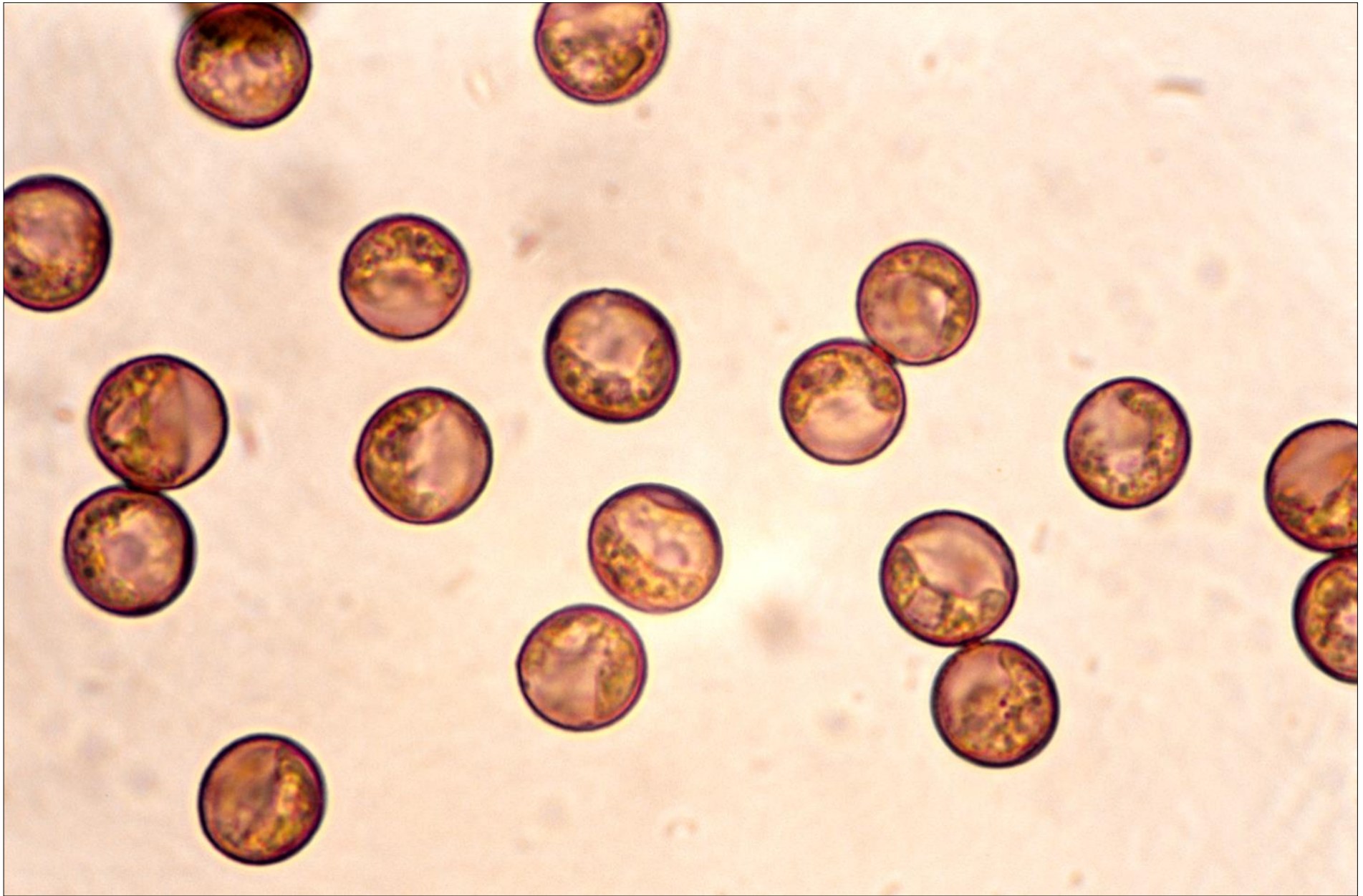
From the same microscope slide mount as on the previous page, but this photo taken using the X20 objective (enlarged). Note the yellow lime nodes with narrow hyaline limeless interconnections (one of the latter arrowed).



A well-defined calyculus from a fresh, squashed, fruiting body that formed on the glass edge of Ann's dung incubation chamber. In addition to the spores, note especially the fibrillose stalk and fibrillose extensions into the sporangium calyculus. Photo taken from a SMF microscope slide mount using the X20 objective (enlarged) and brightfield microscopy.



A re-orientation and higher magnification (X40 objective) of the same slide and field of view seen on the previous page. In addition to noting the fibrillose stalk and fibrillose extensions into the sporangium calyculus, note also the surface minute wartiness of spores at the upper left and lower right (arrowed). Spores shown on the next page are seen in a median spore focus and the wartiness is less obvious.



Spores in optical section using a 70% EtOH + water slide mount and the X100 objective. The minute wartiness is less obvious here than in a spore surface focus.