

***Calomyxa metallica* (Berk.) Nieuwl. – SM98 (= PDD 124535) A good match (See the description of its synonym *Margarita metallica* Lister on the following page.)**

**Collected:** 20 March 2024

**Substrate:** hare (*Lepus europaeus*) dung; Incubated in moist chamber 25 March 2024

**Collection site:** NZTM grid ref. E1689530 N5650853, between the pyramids NW side of Mt. Taranaki, altitude 1237m among tussock (alpine scrub zone on old lava flows)

**Collectors:** Ian Flux & Meryll Park; **Identifier:** Dan Mahoney

**Voucher materials:** PDD specimen represented by 2 dried hare pellets accompanied by 1 Shear's mounting fluid (SMF) semi-permanent microscope slide; Zeiss SV 11 Stereo-zoom dissecting microscope in-situ photos of the fruiting bodies using a MC80 camera and Olympus BX51 microscopic slide photos of the fruiting bodies using a DP28 camera; References consulted & Dan's comments.

**References consulted:**

- 1) *Calomyxa metallica* PDD & Mycoportal online (accessed 2 September 2024): PDD records 3 records all collected by Clive Shirley from dead nikau palm fronds; Mycoportal records 289 records primarily from the northern hemisphere. To my knowledge, none of the PDD or Mycoportal records are from dung. *Calomyxa* species are usually seen on decaying wood or on bark (and then often after incubation in a moist chamber).
- 2) Index Fungorum & Wikipedia (accessed 2 September 2024): Two species are recognized, *C. metallica* and *C. synspora* – the latter is reported only from its type collection site in Venezuela on rotten wood (see Farr M.L. & Kowalski D.T. 1974. A new species of *Calomyxa* from the Andes. *Mycologia* 66(5): 884–886.).
- 3) For a variety of photos online see those by Clive Shirley in his Hidden Forest website and in iNaturalist <https://www.inaturalist.org › taxa › browse photos>
- 4) Descriptions and/or comments in Stephenson, S.L. (2003). *Myxomycetes of New Zealand*. Fungi of New Zealand. Ngā Harore o Aotearoa 3: xiv + 238 p. Hong Kong: Fungal Diversity Press and in Lado, C. et al. 2014. Myxomycete diversity of the Patagonian Steppe and bordering areas in Argentina. *Anales Jard. Bot. Madrid* 71(1): e006.

**Dan's comments:** The in-situ photos and water-mounted microscope slide photos with legends provide information on this species.

Lister, G. (1925). *A Monograph of the Mycetozoa. A Descriptive Catalogue of the Species in the Herbarium of the British Museum*. Edn 3. 296 pp., 222 tab. London. *Margarita metallica* Lister is a synonym of *Calomyxa metallica*. The description below fits it well. PDD presently records 3 records for *C. metallica* while Mycoportal records 289.

Genus 50.—**MARGARITA** Lister Mycetozoa, 203 (1894) (pearl). Sporangia sessile; sporangium-wall translucent; capillitium a profuse coil of hair-like nearly simple solid threads, with indistinct attachments to the sporangium-wall.

1. **M. metallica** Lister l.c. Plasmodium watery-white. Sporangia solitary or clustered, globose, sessile on a narrow base, 0.5 to 1 mm. diam., or pulvinate, pearl-grey or copper-coloured, shining, iridescent; sporangium-wall membranous, single, glaucous or yellowish, translucent. Capillitium a profuse coil of very long elastic flexuose solid grey or yellowish threads, 0.5 to 1  $\mu$  diam., increasing in some parts to 2  $\mu$ , scarcely branching in normal developments, with few attachments to the sporangium-wall or almost free, marked with a very lax spiral band of minute spinules. Spores in mass pale pinkish-grey, becoming yellowish-buff in age, when magnified nearly colourless, minutely warted, 8 to 13  $\mu$  diam.—Meylan in Bull. Soc. Vaud. Sc. Nat., xlvi. 56; Macbr. N. Am. Slime-Moulds, ed. 2, 237. *M. pictoviana* Moore in Proc. Nova Scotia Inst. Sci., xii. 96 (1910)? *Physarum metallicum* Berk. & Br. in Mag. Zool. Bot., i. 49 (1838). *Cornuvia metallica* Rost. Mon., App. 35 (1876).

Var. **plasmodiocarpa** R. E. Fries in Svensk Bot. Tidskr., vi. 800 (1912). Sporangia forming plasmodiocarps.—*Perichaena plasmodiocarpa* Blytt Bidr. K. Norg., Sop. iii. 10 (1892). *P. incarnata* Fr. Syst. Myc., iii. 193 (1829)? *Licea incarnata* Alb. & Schw. Consp. Fung., 109 (1805)? *Lycogala incarnatum* Swartz in Handl. K. Svenska Vet. Acad., 112 (1815)? *M. metallica* var. *intermedia* Meylan in Bull. Soc. Vaud. Sc. Nat., xlvi. 56 (1910).

Pl. 196.—*a.* two forms of sporangia on wood; *b.* sporangium on leaf; *c.* capillitium with fragment of sporangium-wall and spores; *d.* capillitium and spore.

The sporangia formed on leaves are usually solitary and spherical; those on wood are often clustered, and either subglobose or in the form of short or elongated plasmodiocarps. The beautiful pearly or pinkish-grey of the freshly gathered spores fades to dull ochraceous-yellow after the specimen has been kept for some time in the herbarium. If developed under unfavourable conditions, the capillitium often consists in part of stout irregular branching threads showing numerous attachments to the sporangium-wall; the sporangia then bear considerable resemblance to cold-weather forms of *Prototrichia metallica*, to which the present species is undoubtedly allied. The var. *microspora* Meyl. (l.c., liii. 462) has rather small spores, 7 to 8  $\mu$  diam. The description of *Licea incarnata* Alb. & Schw., with flesh-coloured iridescent sporangia, hemispherical, oval, 'sub-linear' or flexuose in shape, and extremely fragile sporangium-walls, applies to some forms of the present species; in the absence of the type this determination must remain conjectural.

*Hab.* On dead wood and decaying evergreen leaves: not uncommon in the British Isles in autumn and winter; widely distributed throughout Europe and the western United States; recorded also from the western Himalayas, Malaya, Japan, South Chili, Nova Scotia, New Hampshire.



**SM98. In-situ view of mature fruiting bodies seen on a first hare pellet after incubation for 97 days in a moist chamber. Fruiting bodies on a second pellet in the same chamber developed later.**



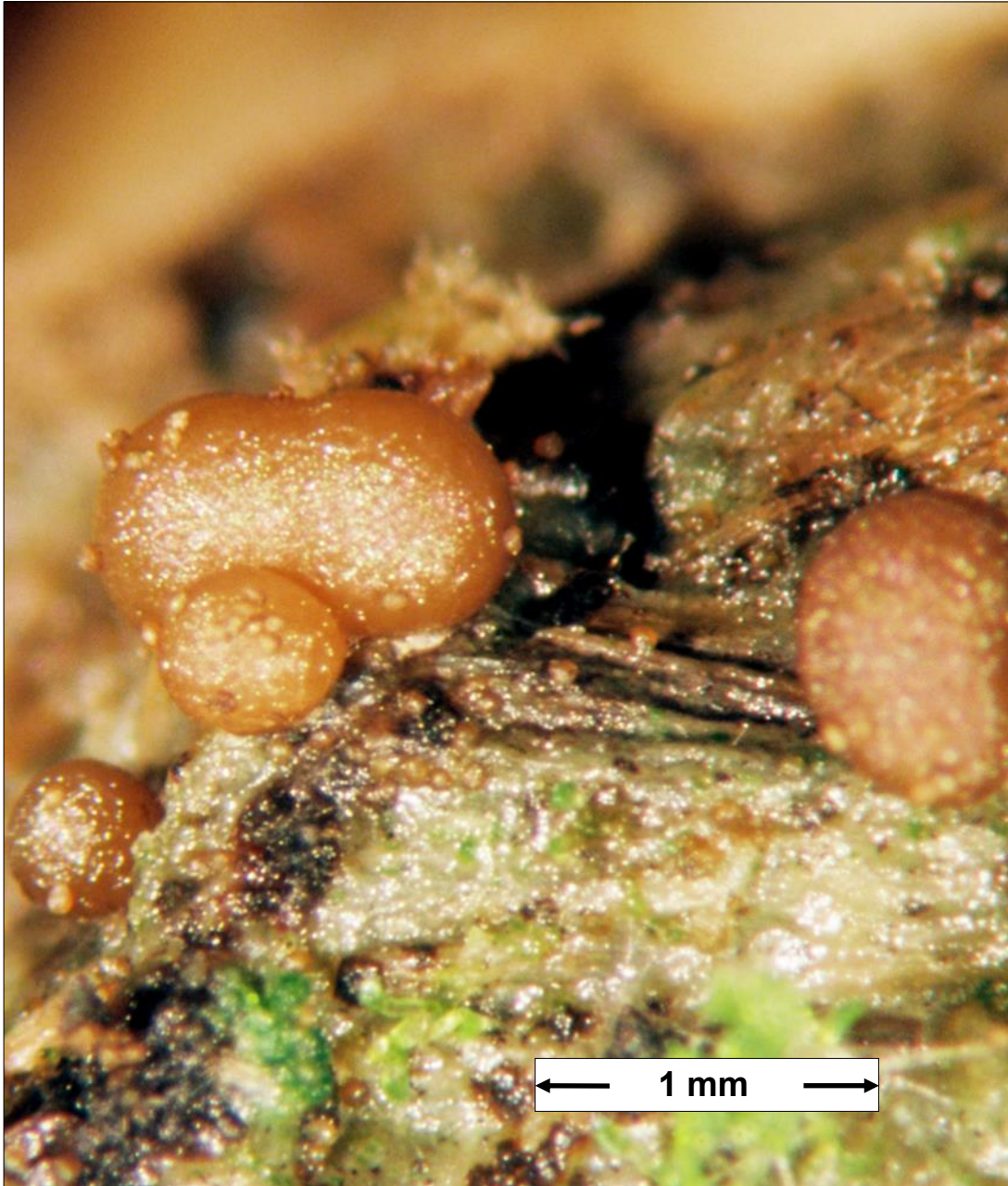
**SM98. In-situ closeup views of mature fruiting bodies seen on the previous page (photographed after repositioning the hare pellet).**



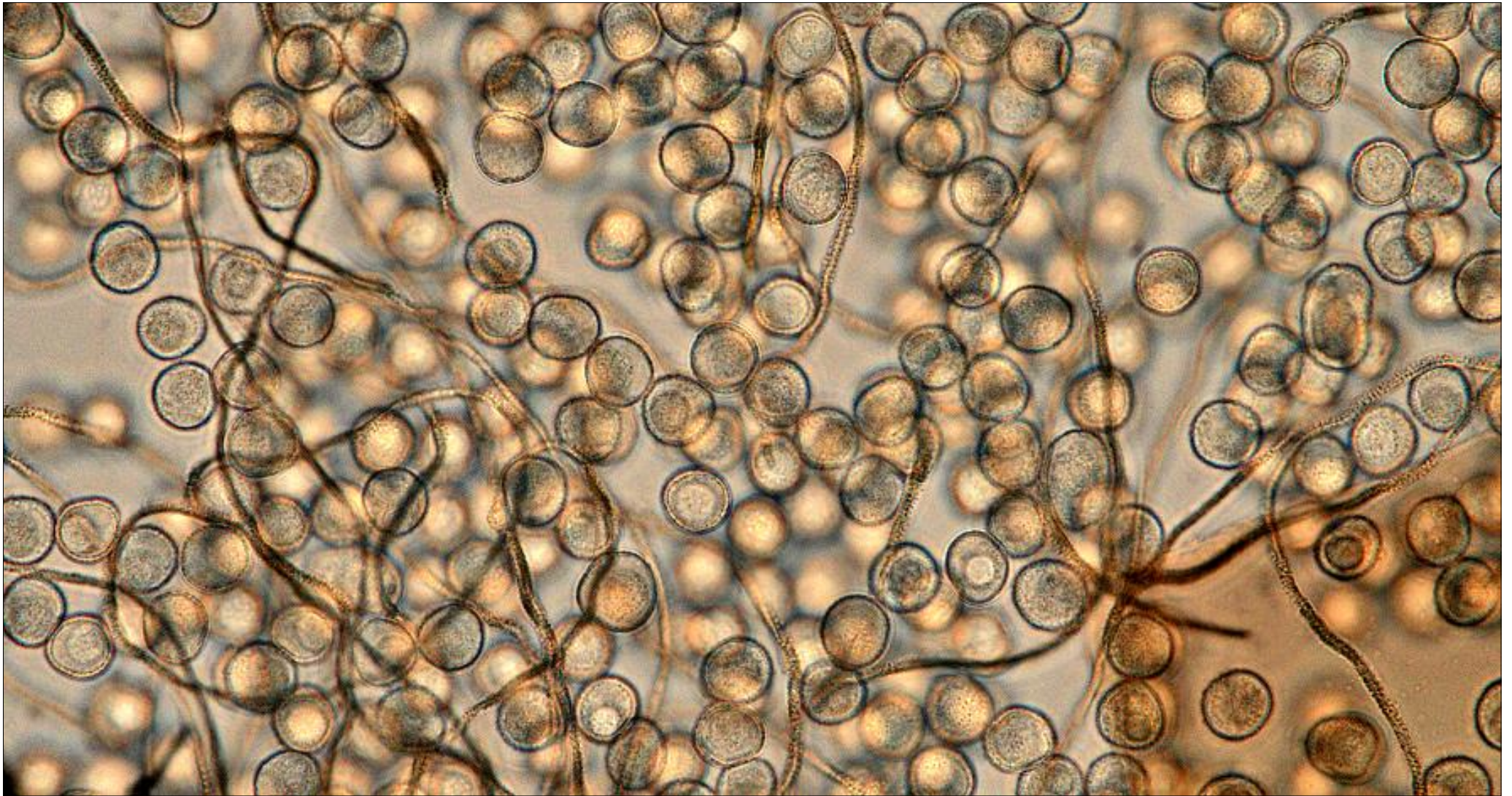
**SM98. In-situ closeup view of the mature, dried and fumigated fruiting bodies 110 days after moist chamber incubation had begun. These 3 fruiting bodies are seen in the left photo on the previous page and on the whole pellet in the page before that. Again the pellet had been repositioned before placement in its herbarium box.**



**SM98. In-situ views of young fruiting bodies seen on a second hare pellet after incubation for 105 days in a moist chamber. Fruiting bodies on the other hare pellet in the same chamber had matured earlier and are photographed on the preceding pages. The 2 pellets represent the dried herbarium specimen that was prepared once the late-fruiting pellet had matured.**

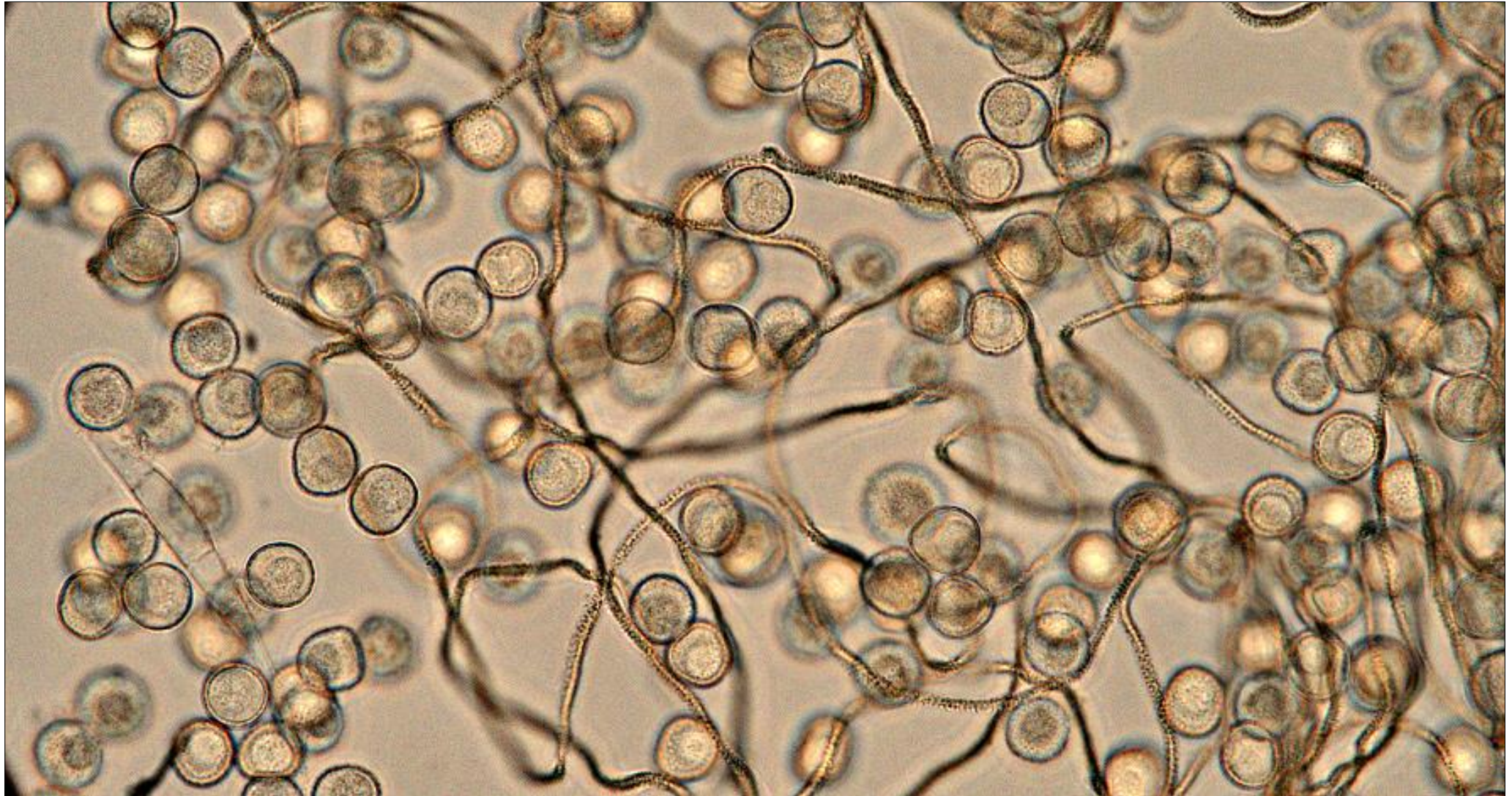


**SM98. In-situ views of mature fruiting bodies – seen immature on the previous page. The hare pellet had now been in the moist chamber for 110 days.**



**SM98. Capillitial threads and spores viewed in a slide water mount using the X100 objective (that view enlarged) and brightfield microscopy. Photo taken 104 days after the onset of incubation from a mature fruiting body removed from the first hare pellet. Note the minutely warted, 9–12  $\mu\text{m}$  diameter spores and the membranous, single-layered, yellowish, translucent sporangium peridium in the lower-right corner.**





**SM98. Another field of capillitial threads and spores viewed in the same slide shown on the previous page. Note especially the long flexuous, scarcely branching, yellowish, capillitial threads (.5–1.5  $\mu\text{m}$  diameter). These are marked with a very lax spiral band of minute spinules.**