

***Periconia minutissima* Corda – AEB 1373 (= PDD 121663) – See *P. minutissima* & the closely related *P. digitata* in Ellis’s Dematiaceous Hyphomycetes (cited below). *Periconia* identifications are difficult and limited to more common spp. – with 226 records in Index Fungorum (accessed July 2024) and keys, descriptions and illustrations to relatively few.**

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: dried hare pellet herbarium specimen (with limited fruiting) accompanied by 1 Shear’s mounting fluid (SMF) semi-permanent microscope slide; Zeiss SV 11 Stereo-zoom dissecting microscope in-situ photos of conidial structures using a MC80 camera and Olympus BX51 microscopic photos of the fruiting bodies using a DP28 camera; references consulted and Dan’s comments.

References consulted: (listed in chronological order)

Mason E.W. and Ellis M.B. 1953. British species of *Periconia*. Mycological Papers 56: 1–127.

Ellis M.B. 1971. Dematiaceous Hyphomycetes. Commonwealth Mycological Institute. Kew. 608 pp. **See his key to *Periconia* species and his descriptions and illustrations of *P. minutissima* and *P. digitata* on the next page.**

Hughes S.J. 1978. New Zealand Fungi 25. Miscellaneous species. New Zealand Journal of Botany. 16: 311–370. **See collection records and a conidiophore/conidia illustration for *P. minutissima* on pp. 339 & 340 resp.**

Carmarán C.C. and Novas M.V. 2003. A review of Spegazzini taxa of *Periconia* and *Sporocybe* after over 115 years. Fungal Diversity. 14: 67–76. **A key to the known *Periconia* species in Argentina (including *P. minutissima*) is included.**

Yang E.-F., Phookamsak R., Jiang H.-B., Tibpromma S., Bhat D.J., Karunarathna S.C., Dai, D.-Q., Xu J.-C. & Promputtha I. 2022. Taxonomic Reappraisal of Periconiaceae with the Description of Three New *Periconia* Species from China. J. Fungi. 8: 243 (30 pp. online). **Provides a history of *Periconia* study, its rare teleomorphic connection and particularly the phylogenetic status of the relatively few species that have been sequenced.**

Dan’s comments: These are included as part of the photo legends in this pdf.

Ellis, M. B. (1971). *Dematiaceous Hyphomycetes*. Commonwealth Mycological Institute, Kew, Surrey, England. 608 pages. **Portions of pages 345, 348 & 349 are reproduced below.**

KEY

Conidia in a well-defined, fairly compact head at the apex of the stipe	1
Conidia formed along the side of the stipe or if at the apex not in a compact head	11
1. Conidiophores without concolorous branches	2
Conidiophores with concolorous branches	4
2. Stipe with a short apical cell cut off by a septum; conidiogenous cells formed over the apex and in a ring below the septum	3
Stipe without a short apical cell, conidiogenous cells formed over the swollen apex	
	<i>cookei</i>
3. Conidia 10–15 μ diam.	<i>byssoides</i>
Conidia 16–22 μ diam.	<i>shyamala</i>
Conidia 25–45 μ diam.	<i>manihoticola</i>
4. Conidia oblong or broadly cylindrical	<i>sacchari</i>
Conidia ellipsoidal	<i>echinochloae</i>
Conidia spherical	5
5. Conidia more than 14 μ diam., distinctly echinulate	6
Conidia less than 14 μ diam., verruculose or with short spines	7
6. Conidiophores circinate at apex	<i>circinata</i>
Conidiophores not circinate at apex	<i>macrospinosa</i>
7. Branches short, close together, usually in verticils of 4–7	<i>atra</i>
Branches longer, often widely spaced, irregular	8
8. Distal branches smooth-walled	9
Distal branches roughly warted	10
9. Conidia mostly 4–6 μ diam.	<i>minutissima</i>
Conidia 7–11 μ diam.	<i>digitata</i>
10. Stipe usually less than 200 μ long, conidia with very short spines	<i>curta</i>
Stipe usually more than 300 μ long, conidial spines 1 μ long	<i>Didymosphaeria igniaria</i>
11. Apex of conidiophore sterile, setiform	12
Apex of conidiophore fertile, stipe torsive	<i>funerea</i>
12. Conidia formed unilaterally, conidiophores scattered	<i>lateralis</i>
Conidia not unilateral, conidiophores closely packed together	13
13. Setiform apex usually very long, not curved	<i>hispidula</i>
Setiform apex short, often curved	<i>atropurpurea</i>

Periconia minutissima Corda, 1837, *Icon. Fung.*, 1: 19.
(Fig. 237 E)

Conidiophores up to 550 μ long, 8–14 μ thick at the base, 5–10 μ immediately below the head; branches at first adpressed, later spreading. *Conidia* spherical, straw-coloured to pale brown, verruculose, mostly 4–6 (occasionally 7) μ diam.

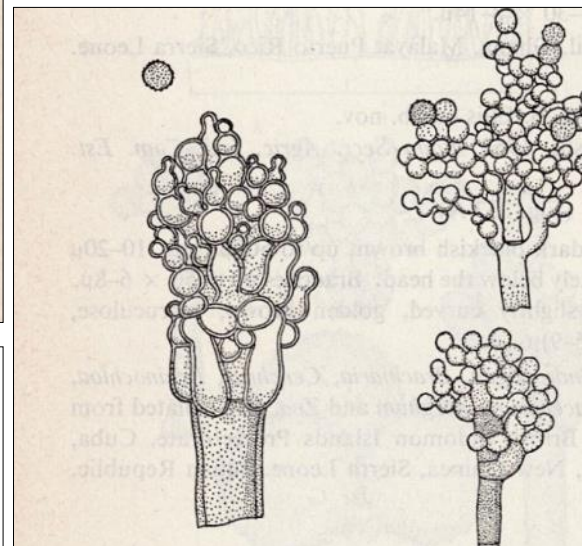
Common and widely distributed on dead stems, sticks, leaves and other plant parts, usually close to or on the ground; Cuba, Europe, Ghana, Kenya, Lebanon, New Zealand, Pakistan, Sierra Leone, Sudan, Tanzania, Zambia.

Periconia digitata (Cooke) Sacc., 1886, *Syll. Fung.*, 4: 274.

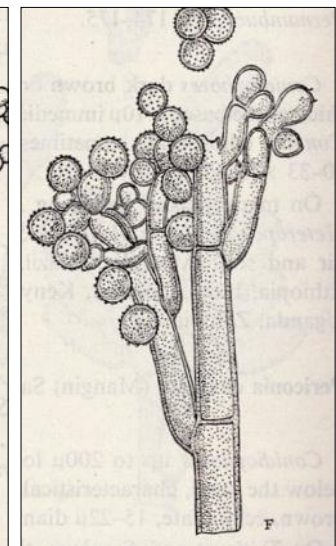
P. paludosa Mason & M. B. Ellis, 1953, *Mycol. Pap.*, 56: 94–98.
(Fig. 237 F)

Conidiophores up to 660 μ long, 9–15 μ thick at the base, 6–9 μ immediately below the head. Branches seen clearly in mature heads where the conidia are relatively loosely compacted. *Conidia* spherical, brown, verruculose to shortly echinulate, 7–11 μ diam.

On dead leaves and culms of *Andropogon*, *Borassus*, *Carex*, *Chloris*, *Cladium*, *Eriophorum*, *Juncus*, *Musa*, *Oryza*, *Panicum*, *Phragmites*, *Sorghum* and *Zea*; Europe, India, Israel, Java, Kenya, Malawi, Pakistan, Sabah, Sierra Leone, U.S.A.

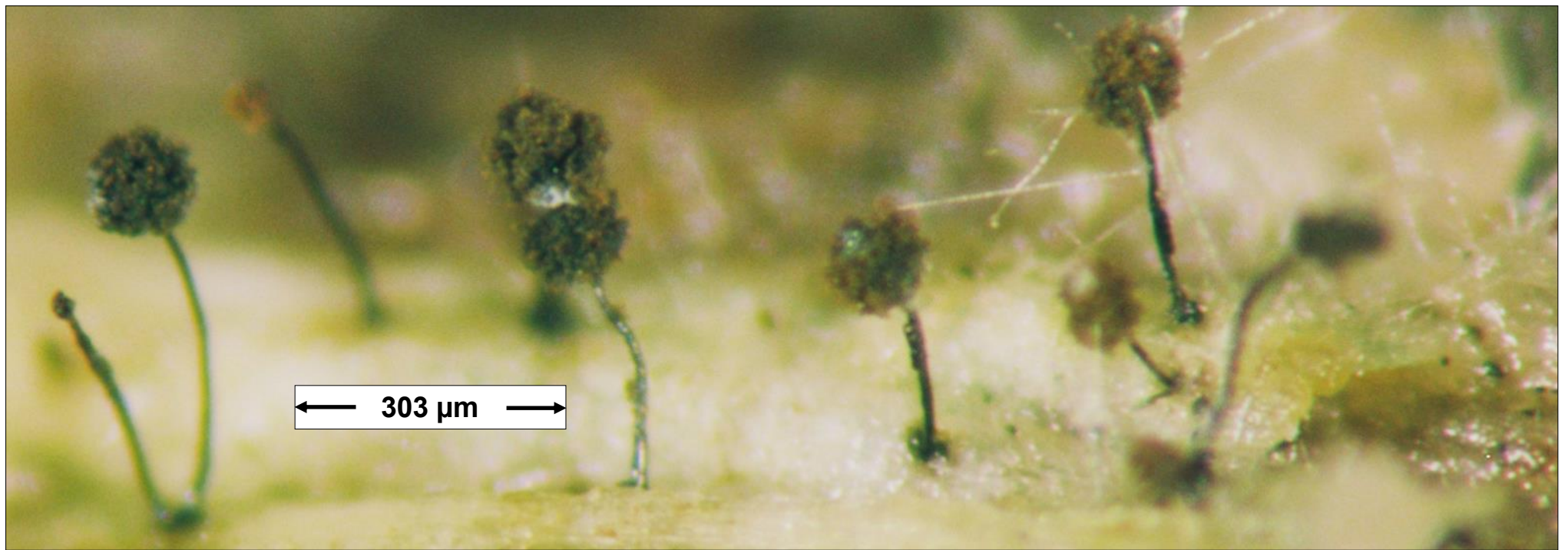
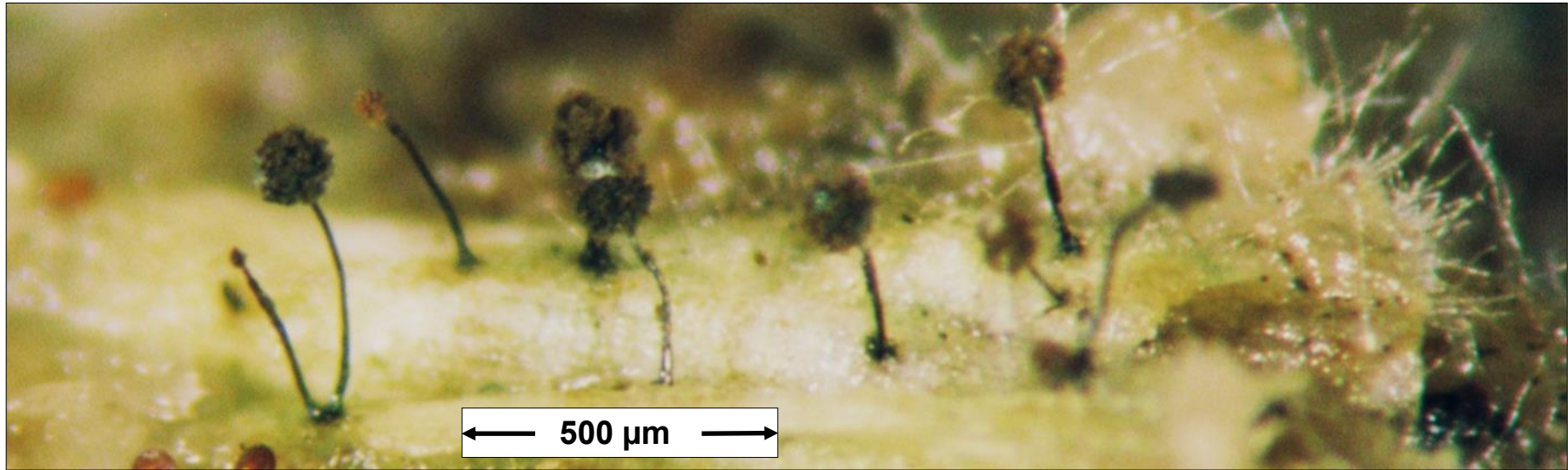


Periconia minutissima Fig. E

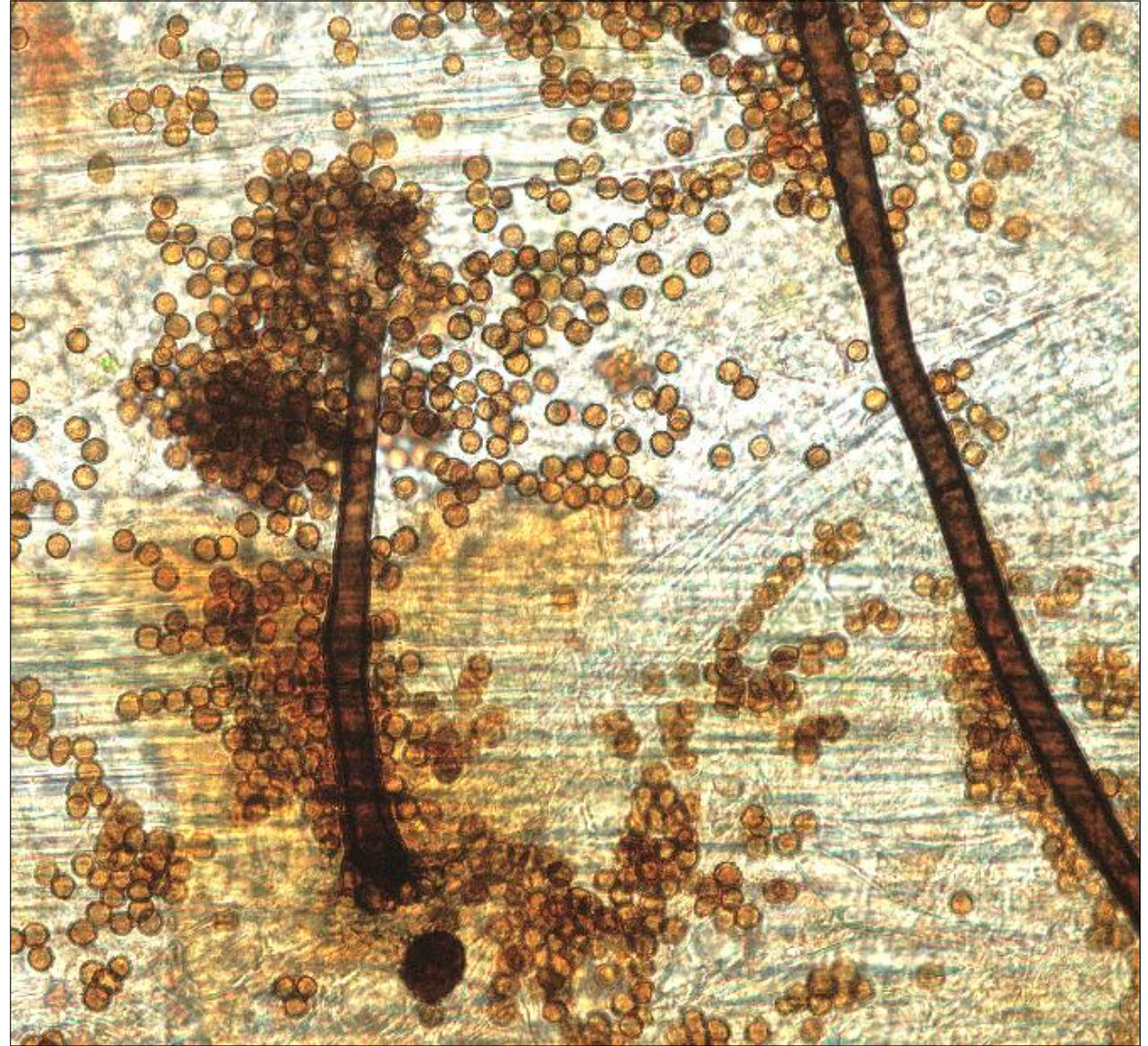
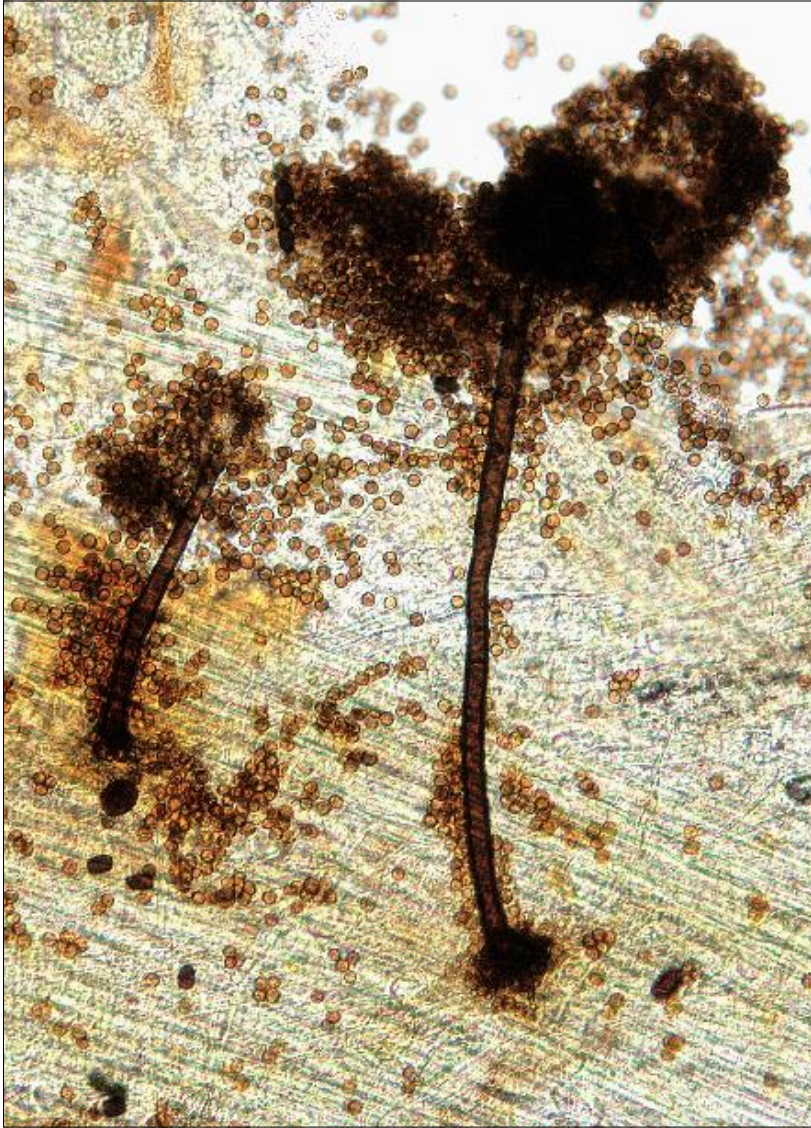


Periconia digitata Fig. F

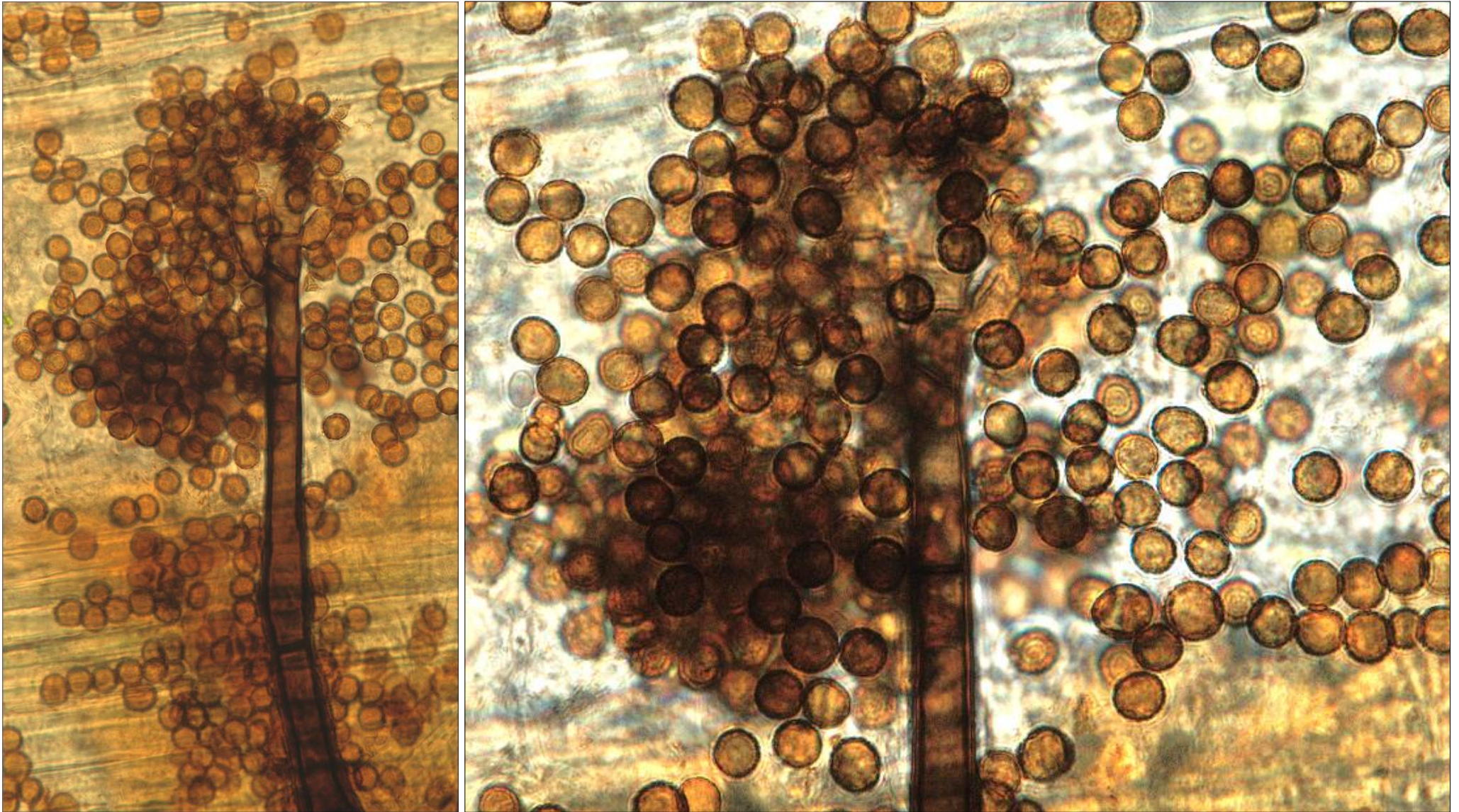
Ellis in his 1971 book presents a key to 17 species. In his 1976 book (*More Dematiaceous Hyphomycetes*) he provides a key to 10 additional species. Although other species have been recorded before Ellis, and especially since Ellis, only a few country or localized morphological keys exist.



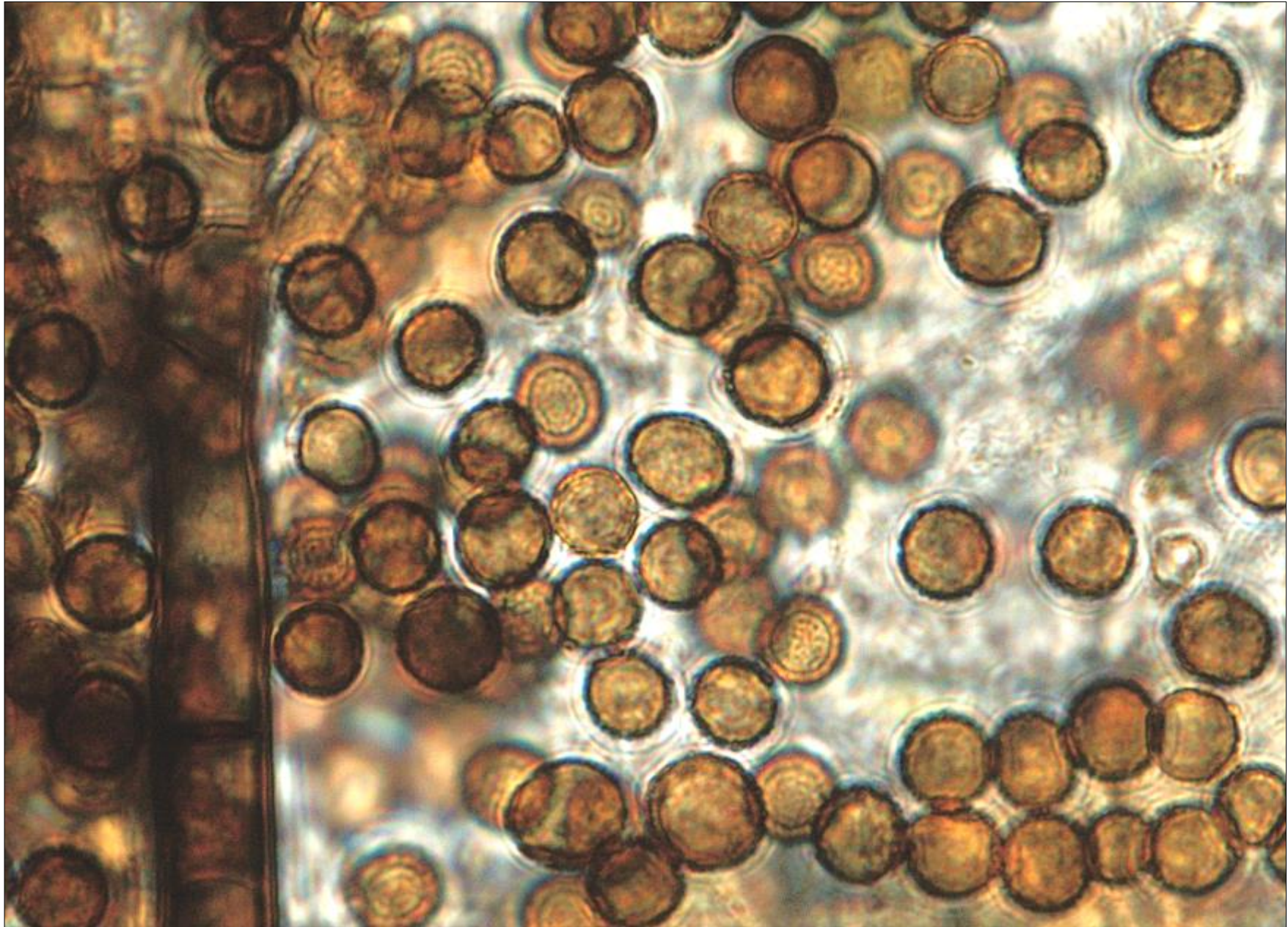
AEB 1373. In-situ views of the *Periconia minutissima* conidia and conidiophores on fresh hare dung in a moist incubation chamber.



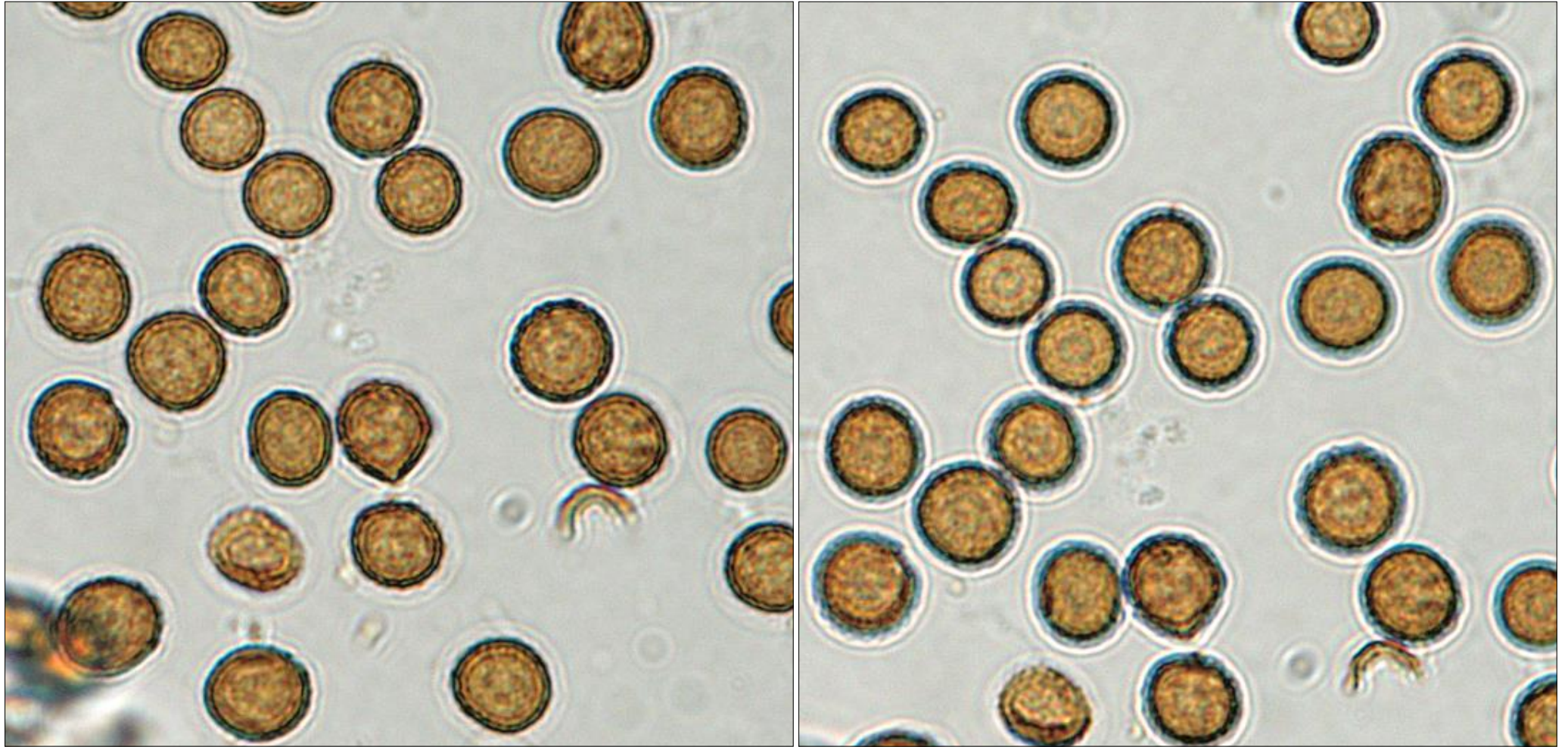
AEB 1373. Microscopic views of 2 fruiting structures in SMF using the X20 & X40 objectives and brightfield microscopy. The shorter conidiophore is $300 \times 20 \mu\text{m}$ while the longest is $355 \times 20 \mu\text{m}$.



AEB 1373. Microscopic views of the smaller fruiting structure on the previous page using the X40 & X100 objectives. Note the concolorous, smooth, septate, apical conidiophore branches inside the conidial head. These are further magnified on the next page.



AEB 1373. Conidia and apical conidiophore branches inside the conidial head. SMF mount with an enlarged X100 objective view. Warty on the globose conidia is especially obvious.



AEB 1373. Both photos, mostly with the same conidia, viewed in SMF under the X100 objective. Each photo with a slightly different focus. Spores 6–7(–8) μm .