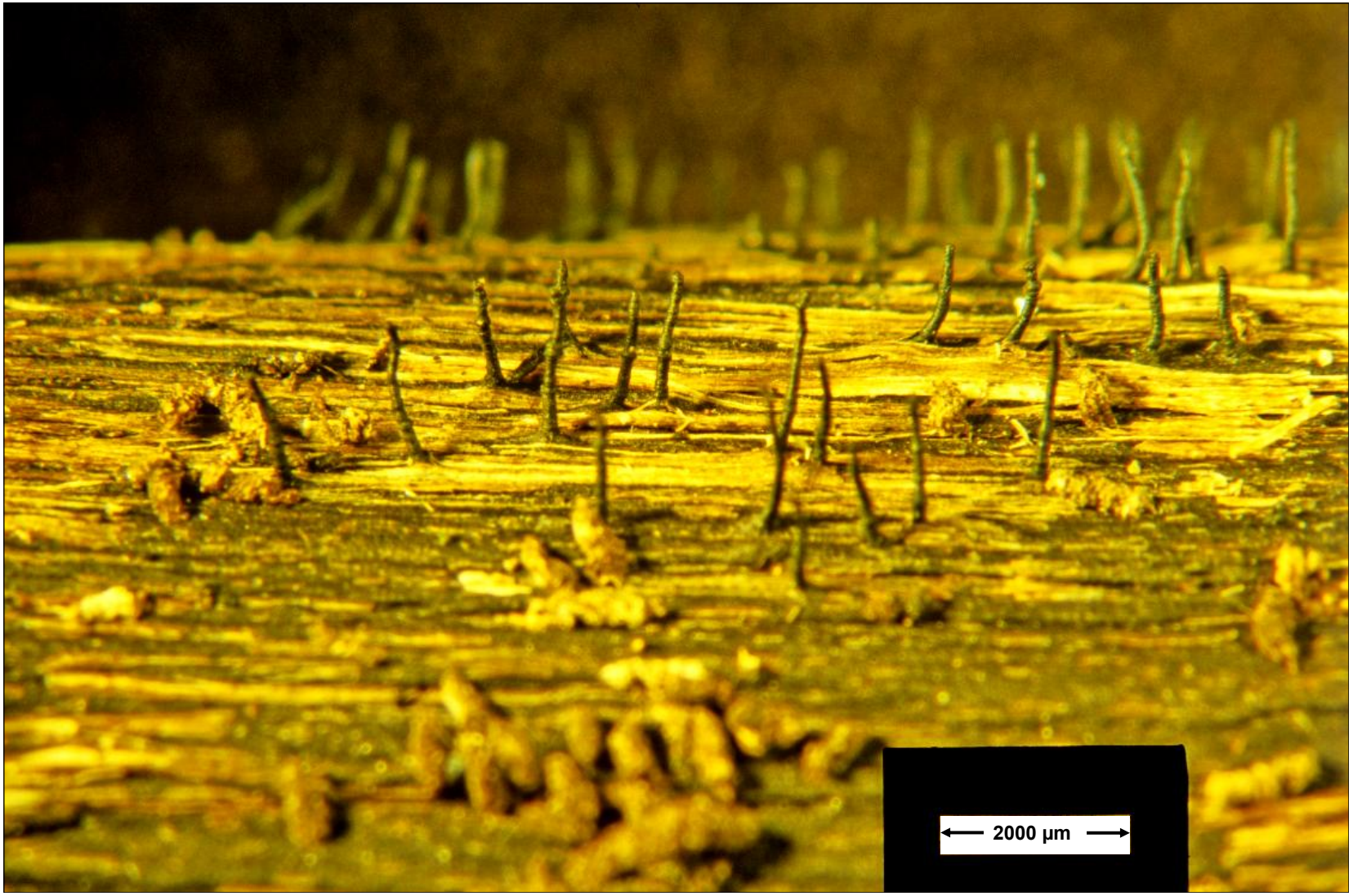
***Lentomitella investita* (Schw.) Réblová – PDD 126778 (= AEB 1292)**
See also the 2010 collection [PDD 101972 (= AEB 1138)] from Kaitoke Regional Park which represents the same species.

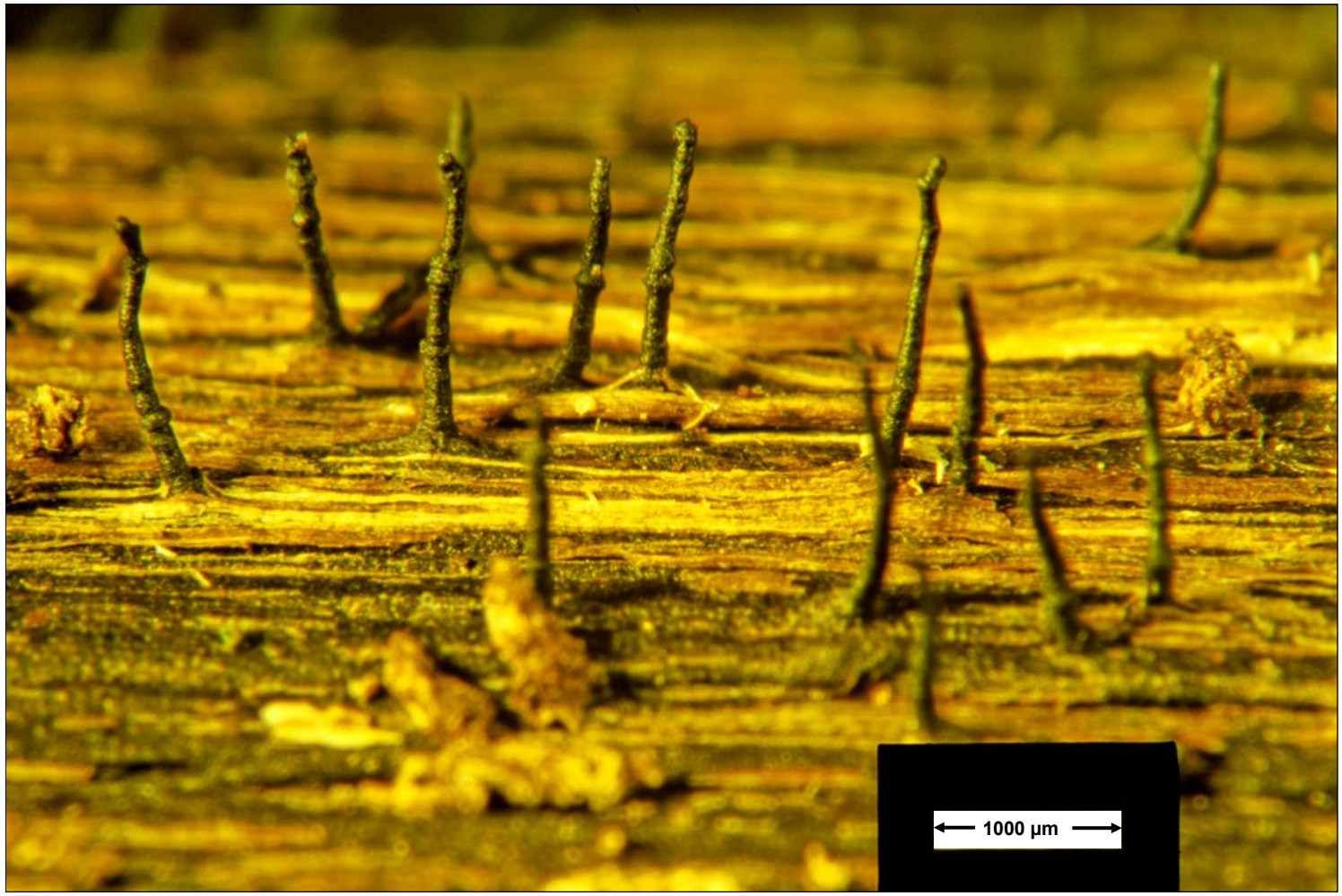
Collection site: Rimutaka Forest Park, Catchpool Track
Collection date: 23 April 2015
Substrate: firm dead stem of a fallen *Freycinetia banksii* or kiekie (had fallen in 2011 or before when the tree on which it was growing fell – or was cut down) on the still firm surface beneath the dead sheathing leaf bases (more obvious where the sheathing leaf bases had eroded away). The softer inner portions of the stem had rotted away leaving only numerous vascular bundles.
Collector: Ann Bell
Identifier: Dan Mahoney

Voucher materials: Dried fumigated herbarium specimens (segments of the dead kiekie stem) glued into 2 small boxes and placed in single packet along with 3 semipermanent slide mounts: 1) lacto-Fuchsin mount with asci & striate ascospores, 2) water/SMF/aniline blue lactic acid with germinating ascospores and 3) water/SMF/aniline blue lactic acid with numerous free floating asci; 6 different dissecting scope in-situ projection slides of the long-necked perithecia with venters mostly submerged in the wood and a number of compound scope digital photos from the 3 semipermanent herbarium voucher slides and an aqueous Congo-red slide mount; Dan's brief description on the next page.

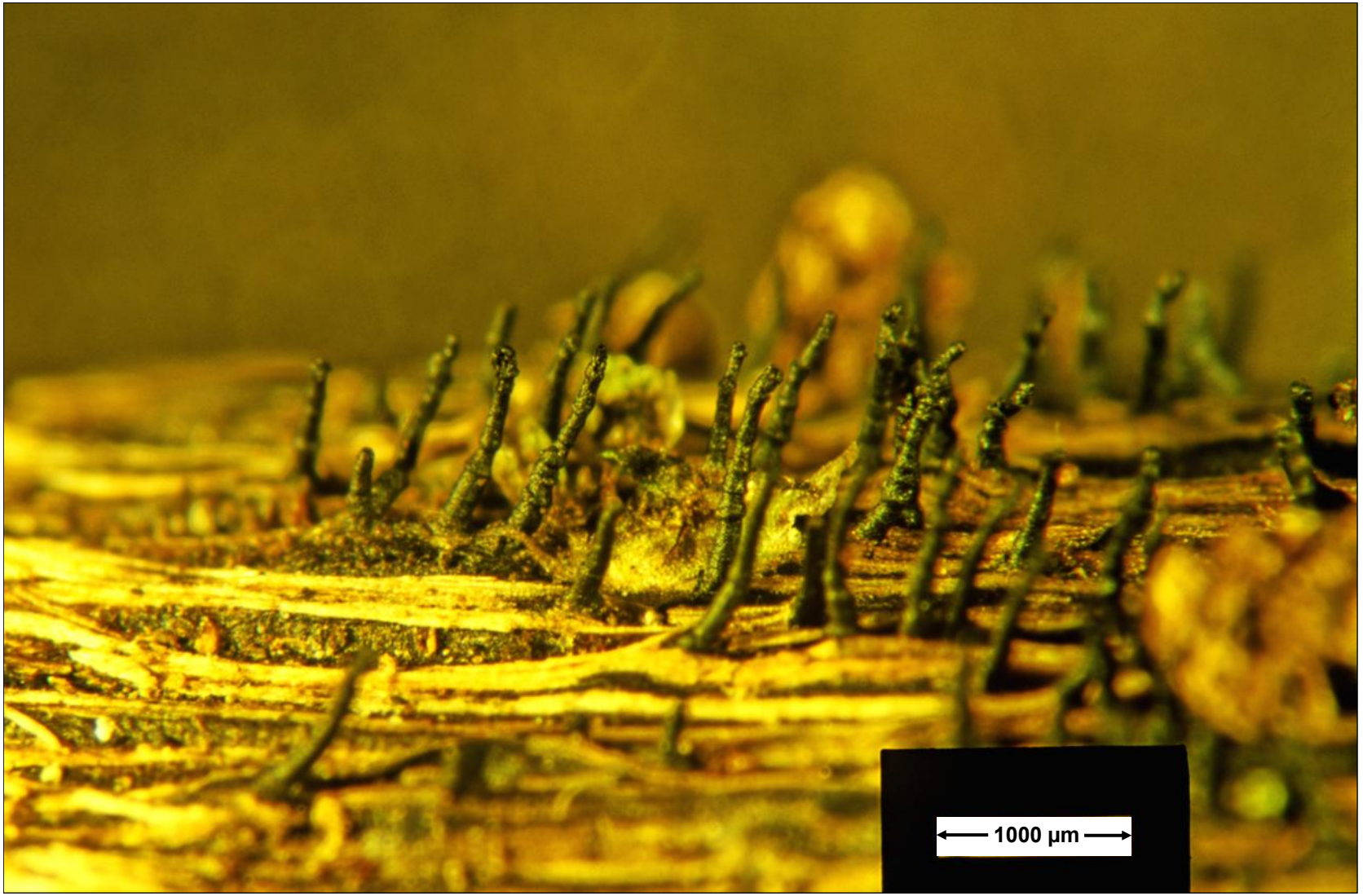
Brief description: **Thin black stroma-like surface mycelium**, within which the perithecia develop; **Perithecia** numerous, separate but often crowded, black, glabrous, with long cylindrical necks; **venters** black, subglobose, glabrous, submerged to partially emergent from the firm stem surface beneath the dead leaf bases or exposed where the leaf bases had eroded away; **necks** to 2 mm+ long, smooth, most with various swellings along their length (rarely without these), the apex itself often irregularly swollen, or detached – but not noticeably sulcate. Necks often penetrating the overlying dead leaf bases or strongly phototropic and bent toward breaks in the overlying leaf bases; **Periphyses** lining the neck ostiolar canal. **Paraphyses** longer than the asci, numerous, filamentous, simple, septate, smooth, hyaline and tapering apically. **Asci** unitunicate, easily detached from the hymenium and free-floating in the centrum and in fluid slide mounts, cylindrically clavate, sessile or with a very short stubby stipes and a distinct non-amyloid apical ring (the ring staining strongly red in aqueous Congo red and clearly seen in other mounting media as well). Apical ring sometimes appearing double but other times single with a lower and upper portion (as in Annulatascaceous species). Asci mostly 42.5–52.5 × 7–8 µm in water/SMF/aniline blue lactic acid slide mounts. **Ascospores** 8 per ascus, irregularly biseriate or strongly uniseriately overlapping (usually the former), hyaline, nearly smooth but with indistinct longitudinal striations (3-4 seen when focusing on the uppermost surface – clearest in lacto-Fuchsin slide mounts), fusoid-clavate to narrowly ellipsoid (usually somewhat fusoid-clavate) with tapering rounded apices; a clear transverse septum at the indented median and often an additional less prominent septum in each half (these septa occasionally very slightly indented); with a uniseriate row of ca 3–4 large vacuoles (these often one per cell in 3 septate spores); mostly (9–)10–12 × 3–4(–5) µm. A slide mount from an older perithecium venter revealed many free germinating ascospores but no asci. Germ tubes were observed at random locations (apical or lateral) from one or both end cells.
No anamorph was observed on the natural substrate.



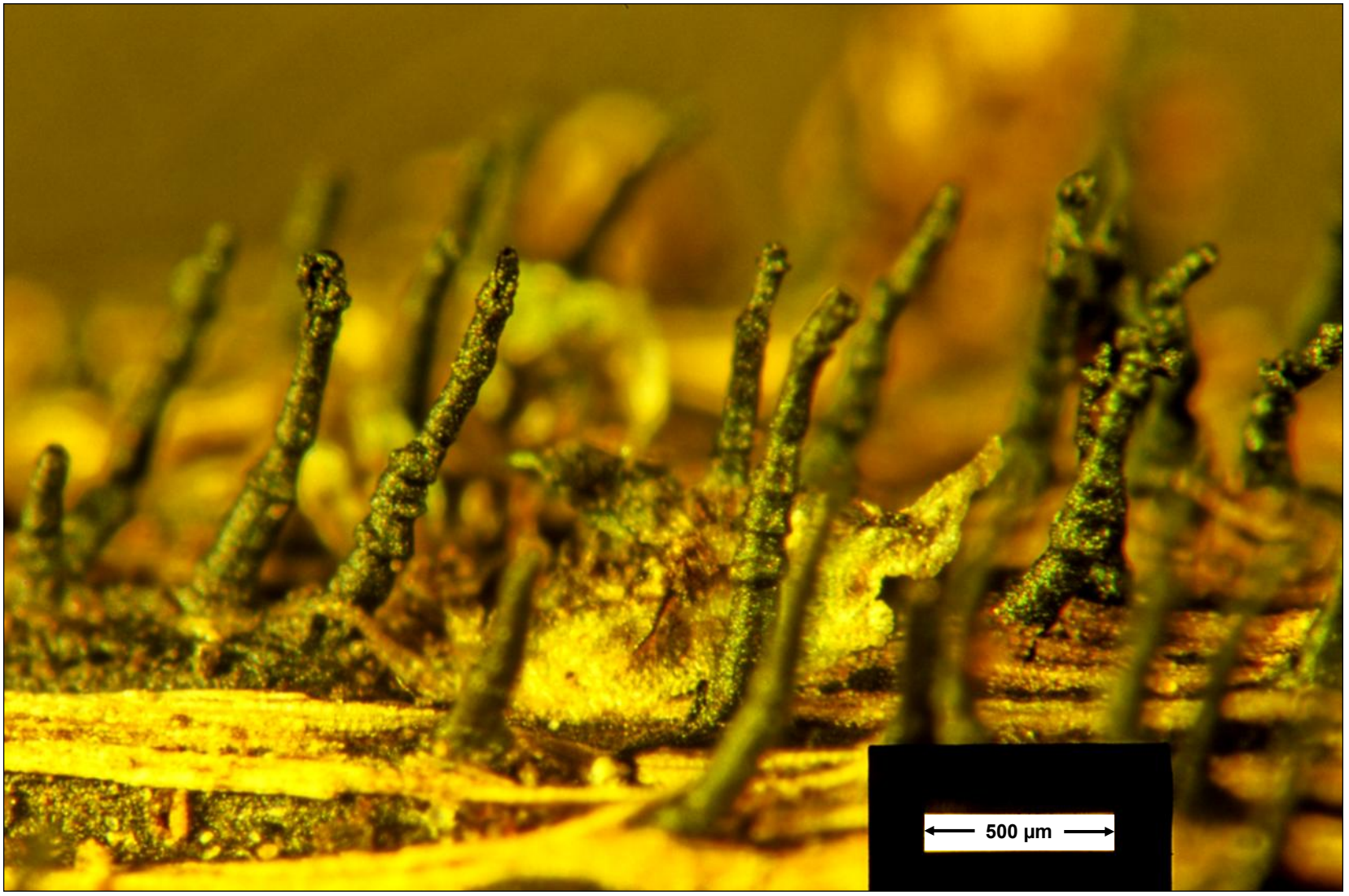
Perithecia in-situ on firm dead stem of *Freycinetia banksii* (common name in Māori = kiekie). Venters mostly submerged in wood.



Perithecia in-situ on firm dead stem of *Freycinetia banksii* (common name in Māori = kiekie). Venters mostly sub-merged in wood. An enlarged portion of the previous page.



Perithecia in-situ on firm dead stem of *Freycinetia banksii*. Venters mostly submerged in wood.



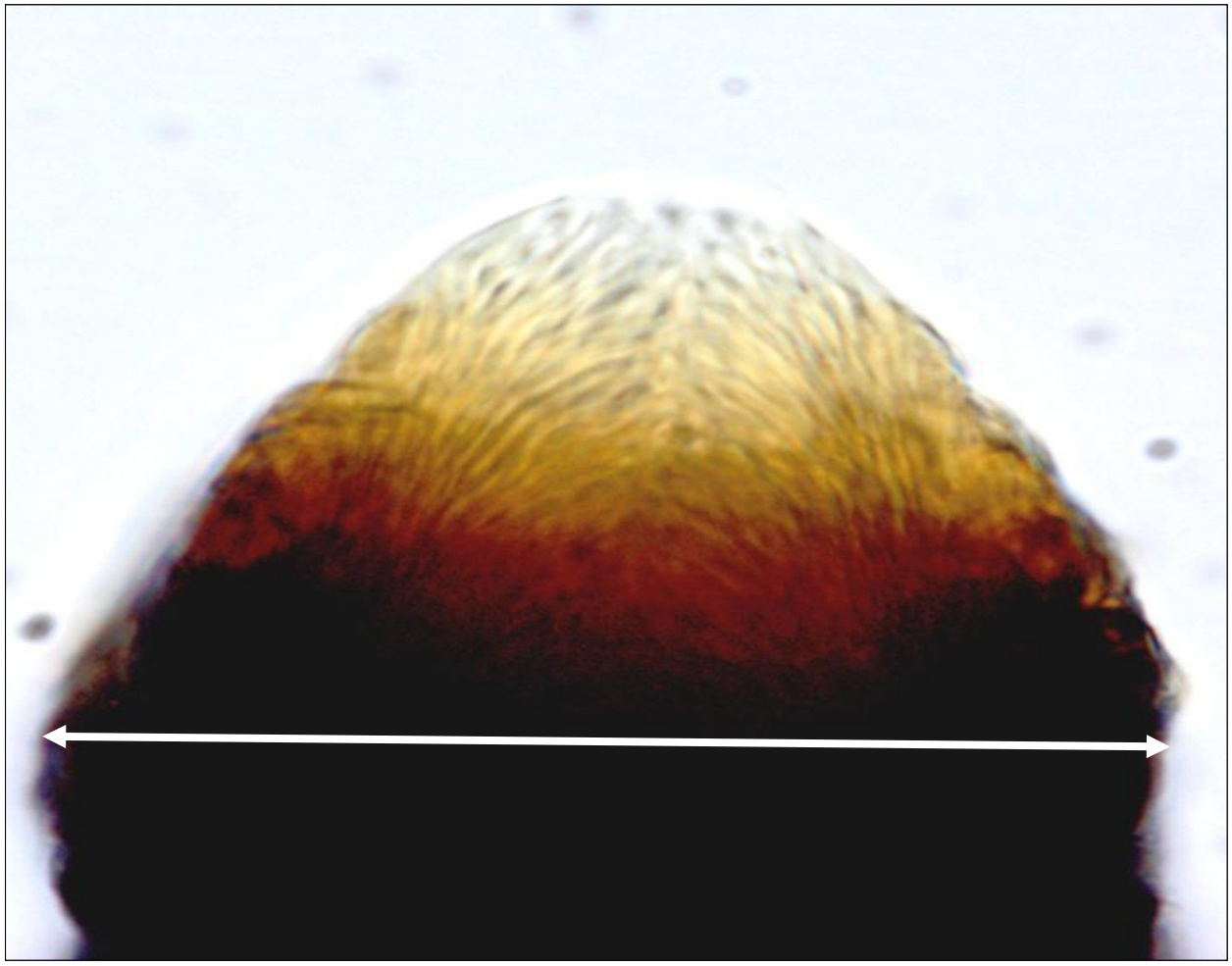
Perithecia in-situ on firm dead stem of *Freycinetia banksii*. Venters mostly submerged in wood. An enlarged portion of the previous page.



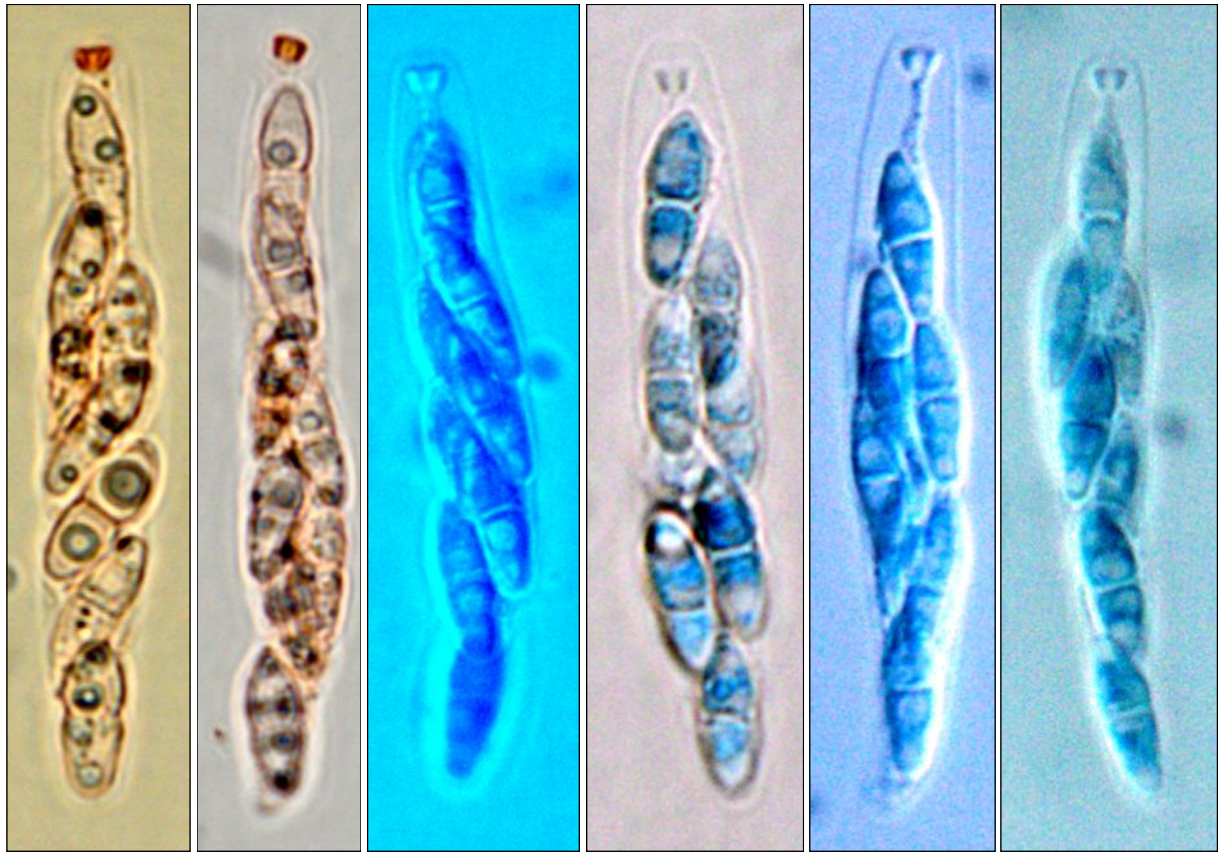
Perithecia in-situ on firm dead stem of *Freycinetia banksii*. Venters mostly submerged in wood. Note the black stroma-like surface from which the perithecia arise. The light brown and dull yellow surfaces represent areas of vascular tissue and thick-walled parenchyma on the dead stem surface of *F. banksii*. Note also the freshly exuded ascospores on upper portions of the perithecium necks (arrowed).



Perithecia in-situ on firm dead stem of *Freycinetia banksii*. Venters mostly submerged in wood. This is an enlarged portion of the previous page. Note the black stroma-like surface from which the perithecia arise. The light brown and dull yellow surfaces represent areas of vascular tissue and thick-walled parenchyma on the dead stem surface of *F. banksii*. Note also the freshly exuded ascospores on upper portions of the perithecium necks (arrowed).



Neck tip periphyses, SMF, X100 objective, brightfield. Arrow = 70 µm long. The neck outer peridium is very dark and difficult to see clearly enough to note its tissue type. The neck ostiolar canal, however, seems to be lined with periphyses.



1767A 1768A 1793 1795 1797 1799A

1767A & 1768A - aqueous Congo red, X100 obj., brightfield
Others - water/SMF/Aniline blue lactic acid, X100 obj., DIC

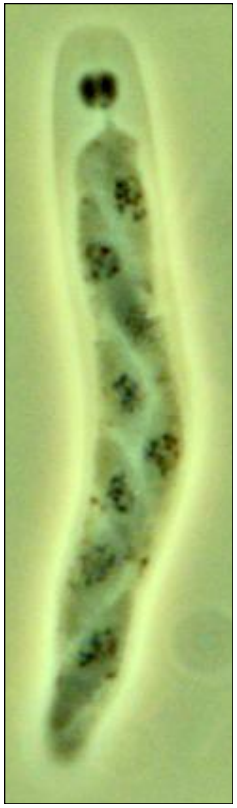
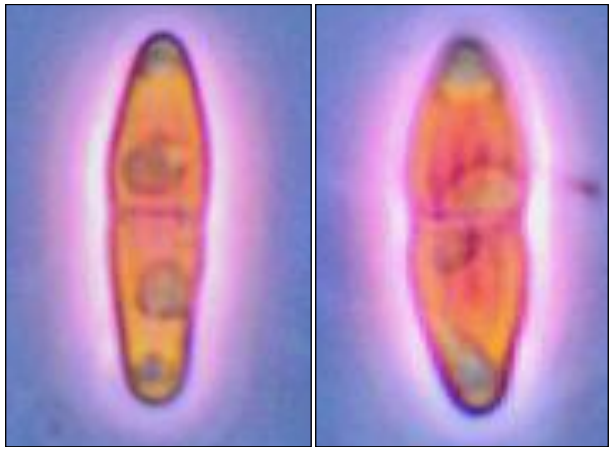
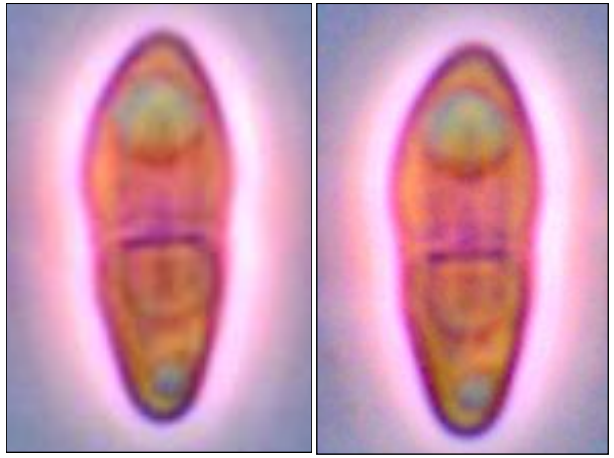


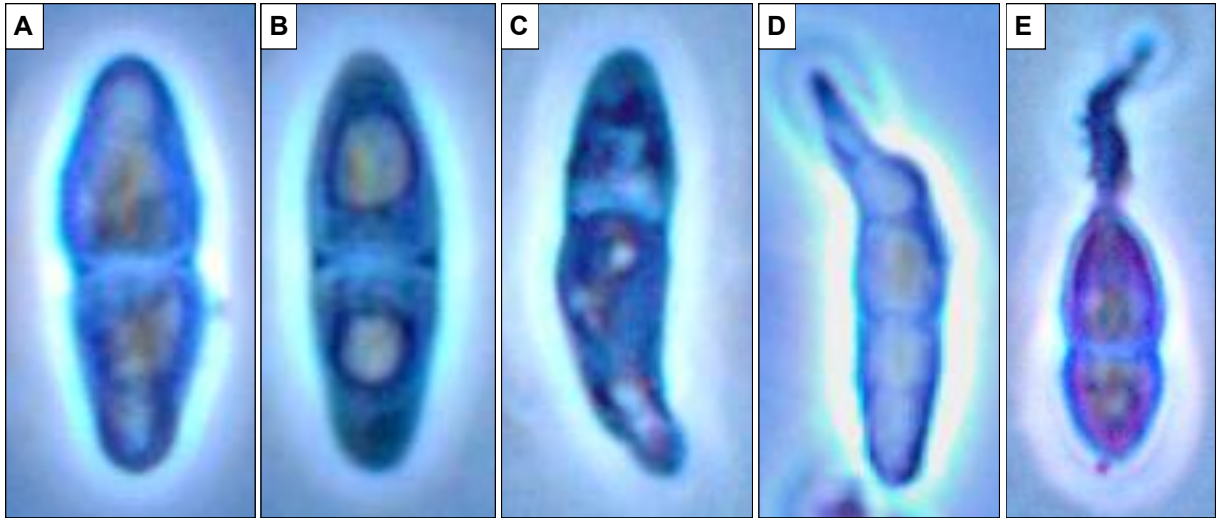
Image 1769A. Young sessile ascus (43×6 µm) in Melzer's reagent mount, X100 objective, phase. Note what appears to be chromosomal material in the developing ascospore nuclei. Cell division at this stage will lead to the 2-celled ascospores typical of those seen in most asci. With age some (many) ascospores undergo additional divisions resulting in 3 septate (4 celled) spores.

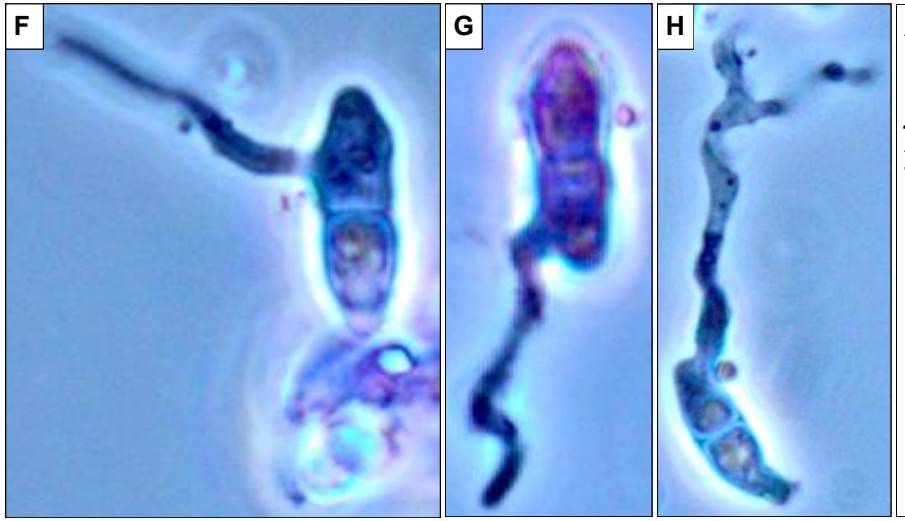


1772A, 12X3 1774A, 12X3.5
Striate ascospores, lacto-Fuchsin slide mount, X100 obj., phase



1776A, 10X4 1777A, 10X4
Striate ascospores, lacto-Fuchsin slide mount, X100 obj., phase





Ascospores: All water/ SMF/Aniline blue lactic acid mounts, X100 objective, phase
A. 1785A, 12X4 µm— typical shape with broader apical cell
B. 1787A, 11X3.5 µm– cell more uniform
C–H: Germination
C. 1881A
D. 1789A
E. 1782A
F. 1786A
G. 1788A
H. 1784A