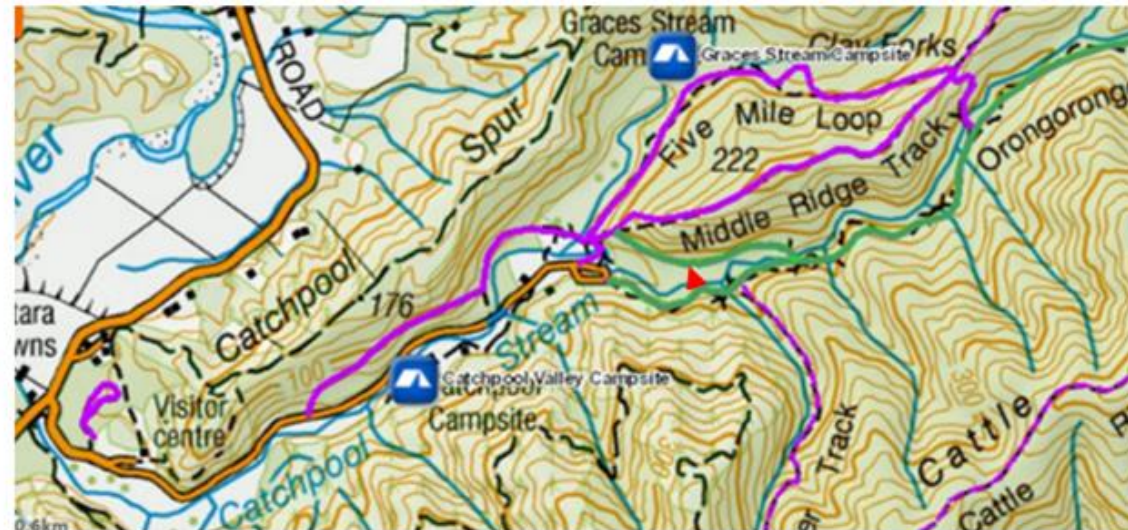


***Calcarisporium arbuscula* Preuss – AEB 1347 (= PDD 120012), a fungicolous species, is reported separately from its host *Rosellinia mammoidea* (Cooke) Sacc. – AEB 1290 (= PDD 120011) where it grew on the ascomata. The dried herbarium material and slides of both are part of the AEB 1290 (= PDD 120011) collection. See the latter for details of AEB 1290.**

**Collection date:** 22 November 2016

**Collection site:** Rimutaka Forest Park – Catchpool Loop Track (note red arrow head)



**Substrate:** *Rosellinia mammoidea* ascomata (the *Rosellinia* on dead wood); **Collector:** Ann Bell; **Identifier:** Dan Mahoney

**Voucher material:** dried herbarium specimen and semi-permanent slide mounts. These are kept in the herbarium packet for *Rosellinia mammoidea* AEB 1290 (= PDD 120011); Dan's in-situ dissecting scope photos (scanned and digitized) and his compound scope digital photos of microscopic detail; Dan's brief description.

**Brief description:** See next page.

***Calcarisporium arbuscula* AEB 1347: A brief description partially paraphrased from the description of *Calcarisporium phaeopodium* (p. 134 in Somrithipol, S. & Jones, E.B.G. 2006. *Calcarisporium phaeopodium* sp. nov., a new hyphomycete from Thailand. *Sydowia* 58(1): 133–140).**

**Conidiophores** macronematous (these arising in clusters from the upper region of their *Rosellinia* ascoma substrate), straight or flexuous, longish (not measured), hyaline, smooth, septate, with conidiogenous cells arranged in whorls at the apex of short branches or in whorls along the conidiophore main axis (whorls along the main axis may contain only conidiogenous cells or a combination of short branches and conidiogenous cells; in turn the short branches may contain apical whorls of only conidiogenous cells or a mixture of both further short branches and conidiogenous cells). **Conidiogenous cells** discrete, tapering, hyaline, with swollen globular to swollen elongate, sympodial and denticulate apices. **Conidia** holoblastic, unicellular, hyaline, smooth, thin-walled, obovoid to elongate, tapering abruptly to a narrow basal truncation, with schizolytic secession (3.5–)4–6(–8+) × 1.5–2.5(–3) μm.

### Some Important *Calcarisporium* References

Hughes, S.J. 1951. Studies on micro-fungi. IX. *Calcarisporium*, *Verticicladium*, and *Hansfordia* (gen. nov.). *Mycological Papers* 43: 25p.

de Hoog, G.S. 1974. The genera *Blastobotrys*, *Sporothrix*, *Calcarisporium* and *Calcarisporiella* gen. nov. *Studies in Mycology* 7: 1–83. (see 70–73 for *Calcarisporium*) Available online for reading (or copying) from Cyberliber 'Studies in Mycology'.

Somrithipol, S. & Jones, E.B.G. 2006. *Calcarisporium phaeopodium* sp. nov., a new hyphomycete from Thailand. *Sydowia* 58(1): 133–140. Included is a key to the 4 species they accept. See pdf online.

Candoussau, F. et al. 2007. Observations on *Neobarya*, including some new species and new combinations. *Sydowia* 59 (2): 179–215. *Neobarya* is a genus in the Clavicipitaceae. *Calcarisporium* anamorphs are linked to *N. agaricola* and *N. xylariicola*. See pdf online.

Sun, J-Z. et al. 2017. *Calcarisporium xylariicola* sp. nov. and introduction of Calcarisporiaceae fam. nov. in Hypocreales. *Mycological Progress* 16(4): 433-445. ResearchGate pdf request.

Paul Cannon. 2018 – Ctrl/click on [Calcarisporium arbuscula](#) which will bring you to Paul's comments in 'Fungi of Great Britain and Ireland'

**Further information on herbarium and cultural records of *Calcarisporium arbuscula***

**Information concerning records in New Zealand:** Cooper J.A. 2005. New Zealand hyphomycete fungi: additional records, new species, and notes on interesting collections. *New Zealand Journal of Botany* 43: 323-349 (information below from p. 325).

**DESCRIPTION:** Conidiophores hyaline, septate, 200-500 x 3 µm. Conidiogenous cells arranged in whorls, up to 20 µm long, strongly tapering to a fine apex bearing conidia on terminal cylindrical denticles. Conidia hyaline, ellipsoidal, 4.5 x 1.5 µm.

**MATERIAL EXAMINED:** MID CANTERBURY: Kennedy's Bush, dead twig of *Kunzea ericoides*, associated with dark-brown septate hyphae of another fungus, 30 Sep 2001, PDD 74774.

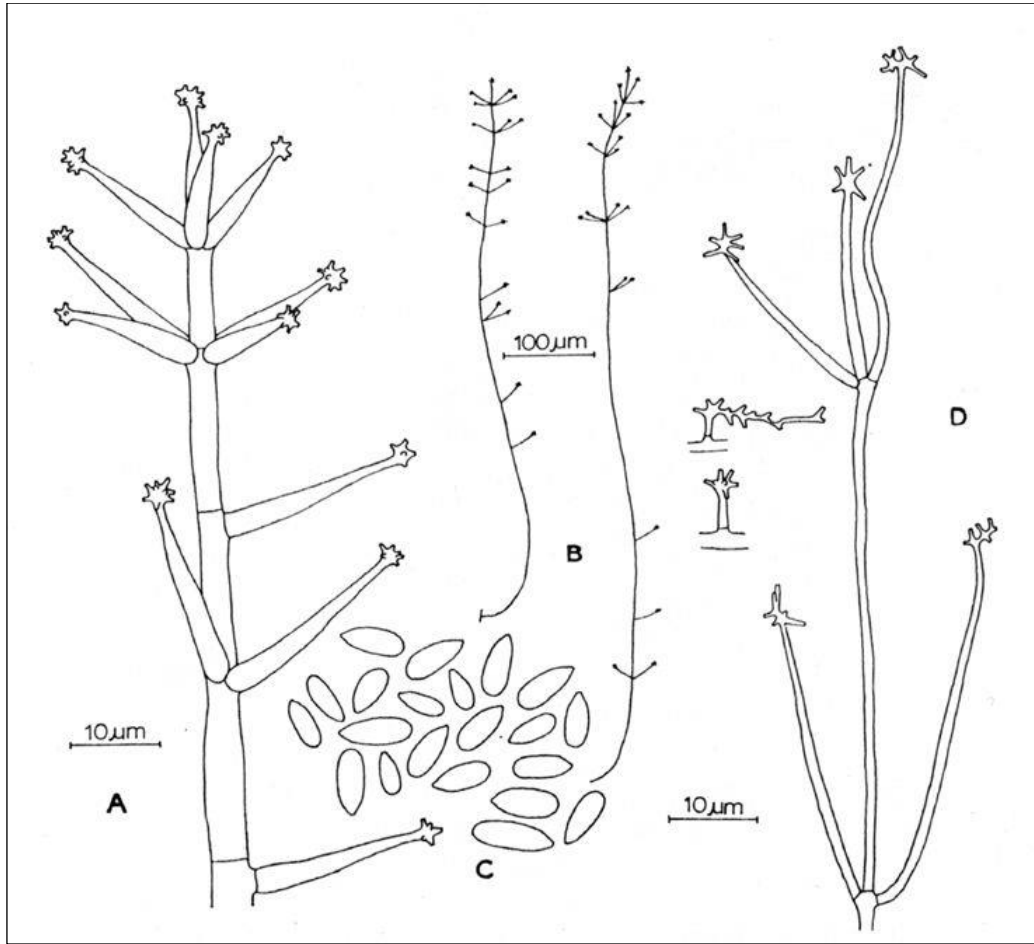
As of

November 2021: There are only 2 records of *C. arbuscula* in Landcare Research PDD New Zealand – PDD 74774 and the collection described herein, but neither was cultured or sequenced. Most records are from the Northern Hemisphere and many of these are fungicolous on boletes and agarics. Ascomycetous hosts (especially hypocreaceous and xylariaceous) are also represented but those cultured and sequenced are mostly basidiomycetous.

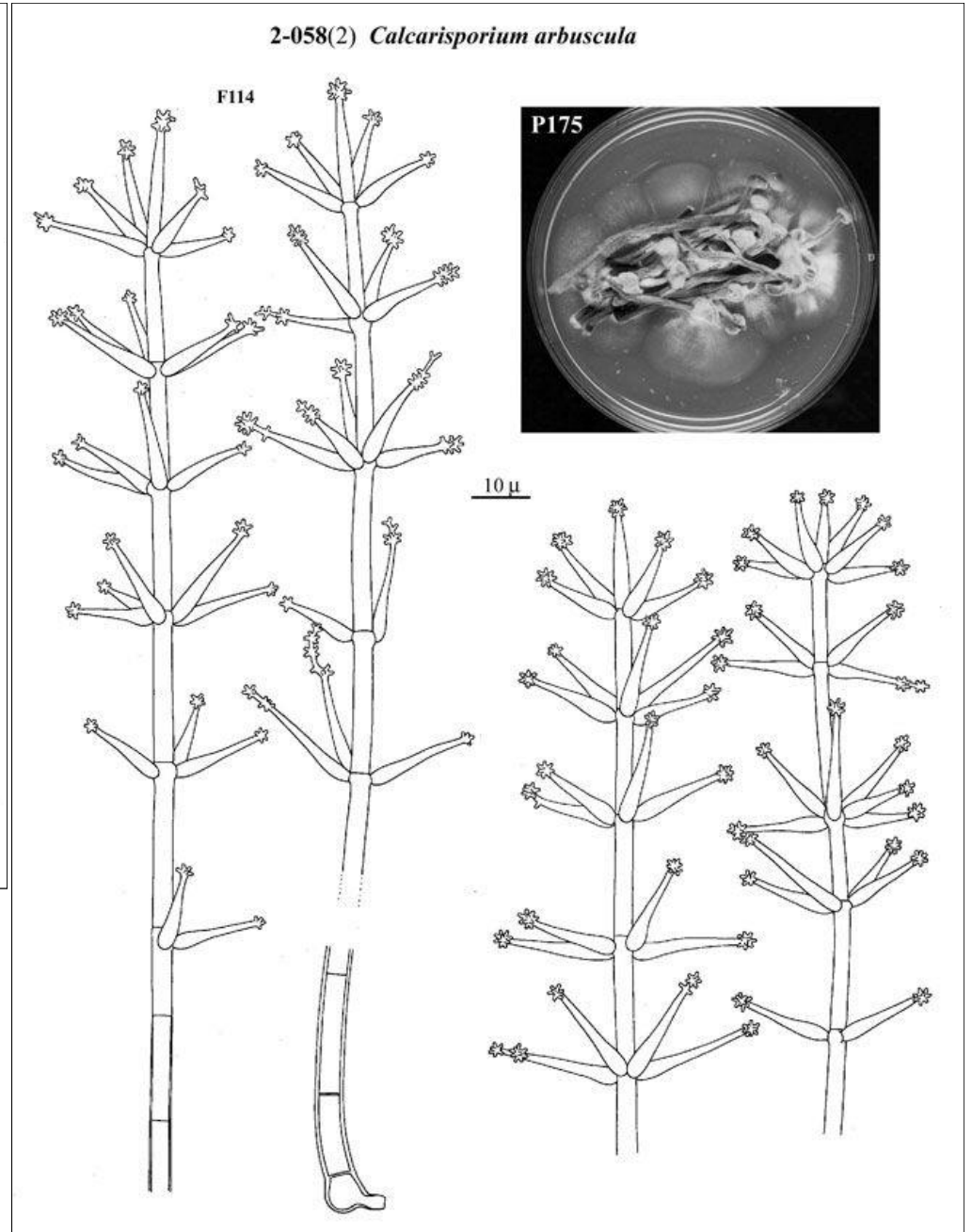
The key below is from Sun, J-Z. et al. 2017.

**Key to *Calcarisporium* species** (updated from Somrithipol and Jones 2006)

- 1a. Conidia ovoid to ellipsoid (length/width ratio <5/1) ..... 2
- 1b. Conidia acerose to narrowly obclavate (length/width ratio >8/1)..... 3
- 2a. Conidiophores well-differentiated, conidiogenous cells 12–26 × 2–3 µm;  
conidia 4–11 × 1.8–3.3.....*C. arbuscula*
- 2b. Conidiophores less differentiated, conidiogenous cells 18–70 × 1.2–3 µm;  
conidia 3–5 × 1.5–2.5 µm .....*C. cordycipiticola*
- 2c. Conidiophores less differentiated, conidiogenous cells 5–12 × 1.4–1.8 µm;  
conidia 3–5 × 1.2–1.8 µm.....*C. ovalisporum*
- 2d. Conidiophores less differentiated, conidiogenous cells 12–28 × 1–3 µm; conidia 3–5.5 × 2–3 µm; basal part of conidiophores with proliferations.....*C. xylariicola*
- 3a. Basal part of conidiophores medium brown, without proliferations;  
conidia 10.5–18 × 1.0–1.2 µm.....*C. acerosum*
- 3b. Basal part of conidiophores dark brown, with proliferations;  
conidia 7.5–12.5 × 0.7–1 µm.....*C. phaeopodium*



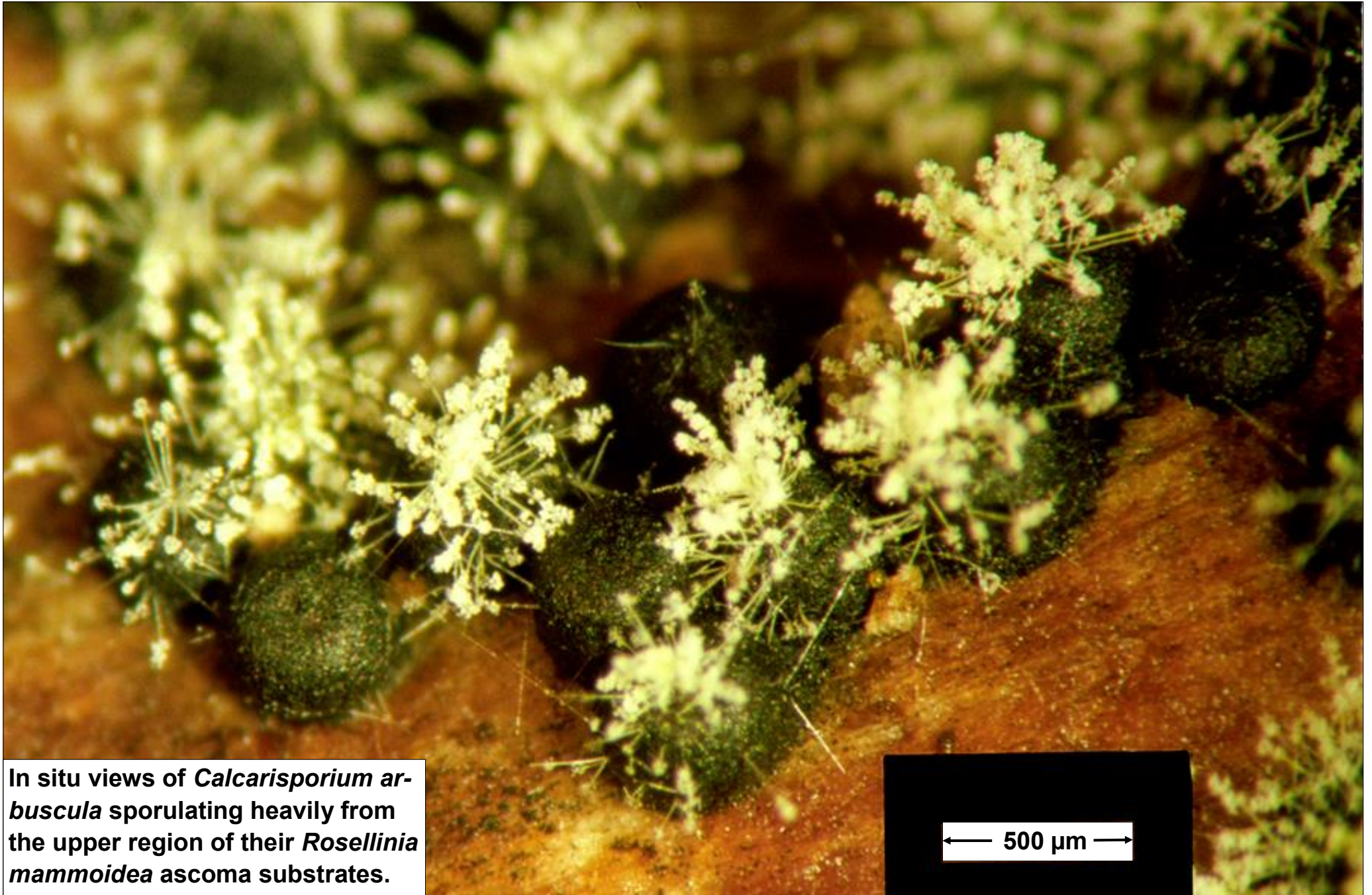
Illustrations from Mycobank



In-situ early emergence of *Calcarisporium arbuscula* conidiophores from the upper region of their *Rosellinia mammoidea* ascoma substrates.



← 500 μm →



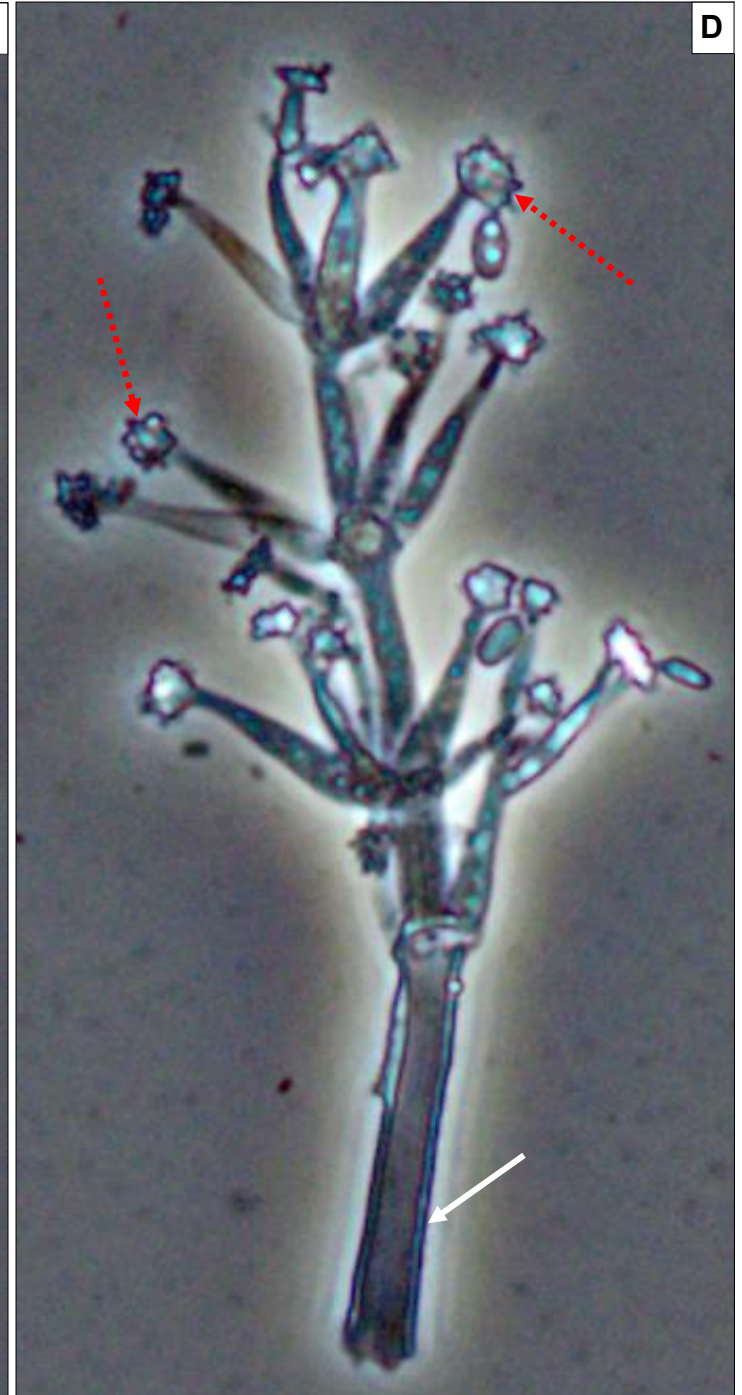
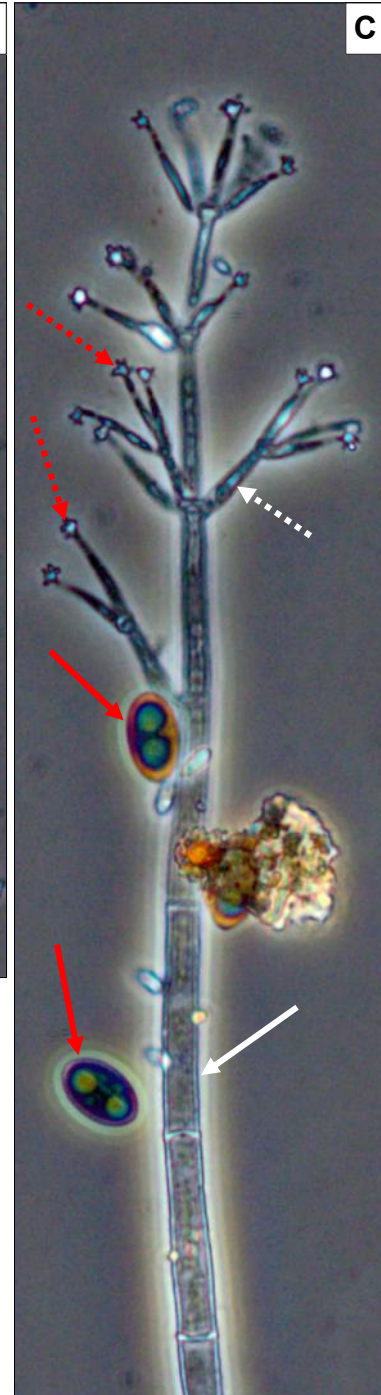
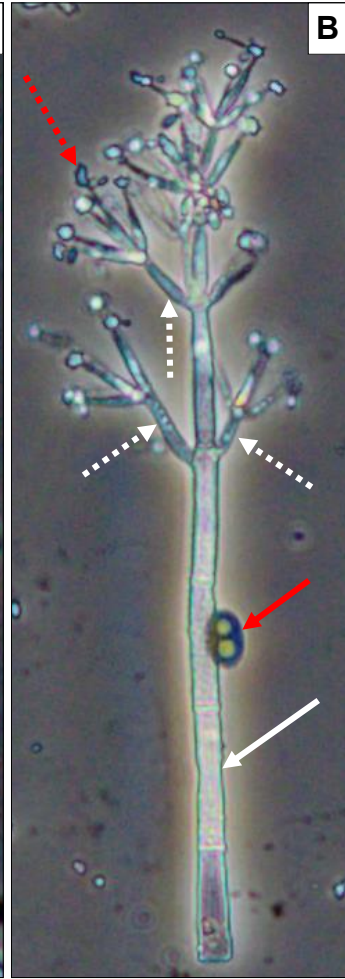
In situ views of *Calcarisporium arbuscula* sporulating heavily from the upper region of their *Rosellinia mammoidea* ascoma substrates.

← 500 μm →



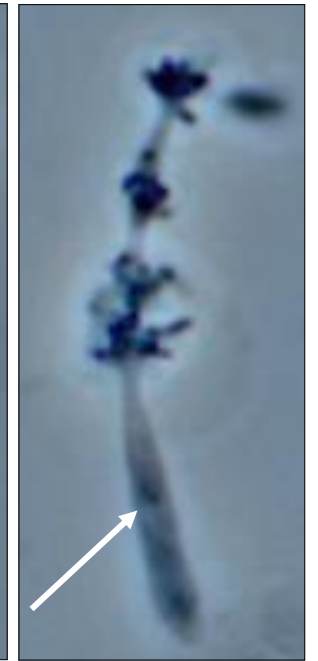
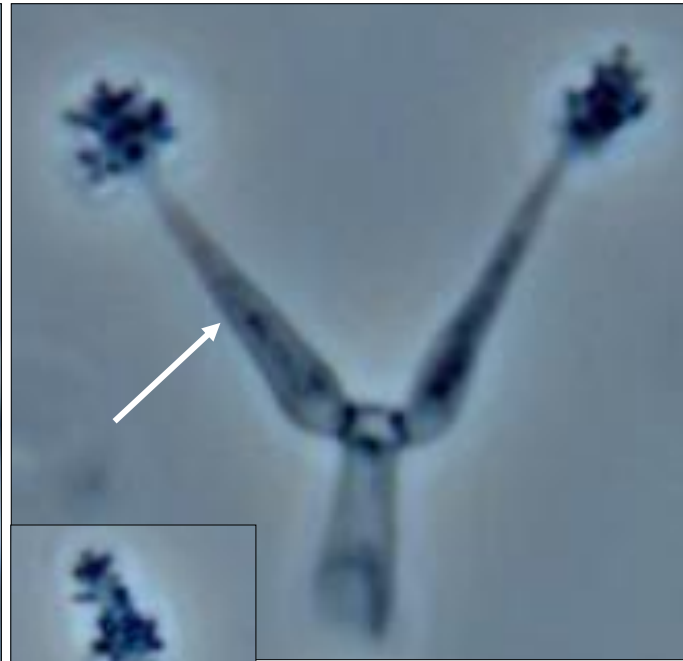
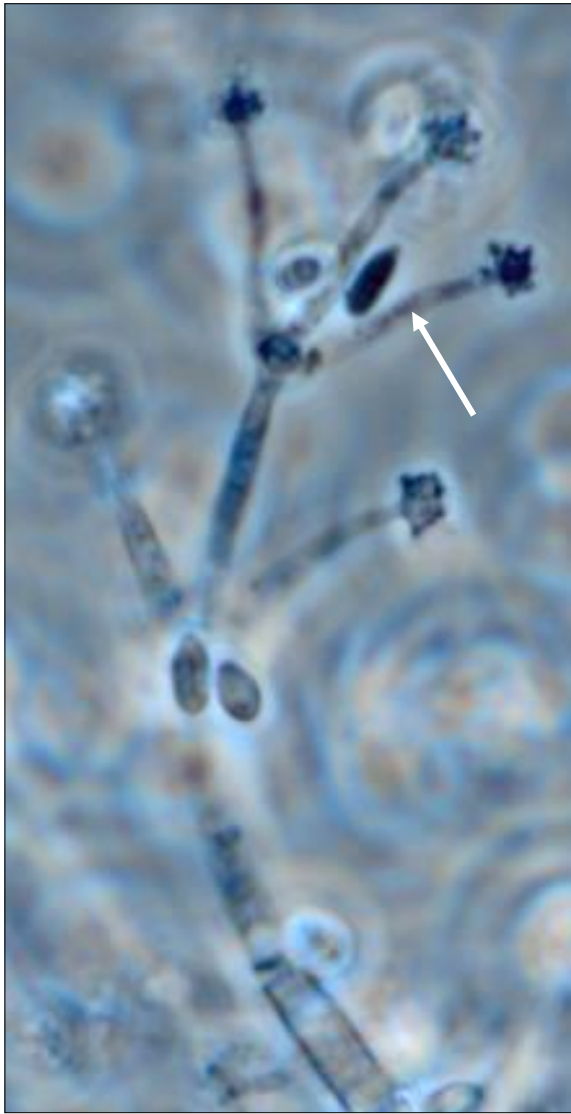
A close up view  
from the previous  
page.

← 303 μm →



*Calcarisporium arbuscula* microscopic detail. All photos from water mounts and phase microscopy. A,B. X20 objective. C,D. X40 objective. Conidiophore main axis or major branch (solid white arrows). Minor primary or secondary side branch (dotted white arrows). Sporogenous cell (in whorls) with globular to elongate sympodial denticulate apex from which most spores are detached (dotted red arrows). Occasional *Rosellinia mammoidea* ascospore (solid red arrows).





***Calcarisporium arbuscula* with emphasis on the sporogenous cells (solid white arrows). All photos from SMF mounts, X100 objectives and phase microscopy. The spore-bearing apex of the sporogenous cell (usually irregularly globular to elongate or even proliferating) produces spores sympodially with spores borne on short denticles.**

*Calcarisporium arbuscula* conidia (3.5–)  
4–6(–8+) × 1.5–2.5(–3) μm. SMF mount,  
X100 objective, phase microscopy.

