

***Xenolophium lanuginosum* AEB 1028 (= PDD 94206) and CBS 123490 – the CBS designation is an axenic culture sent to the Centraalbureau voor Schimmelcultures (now the Westerdijk Fungal Biodiversity Institute)**

Substrate and site: Unidentified dead branch (approx. 2.5 cm in diam) on the ground in the bush gully area behind a suburban residence in Lower Hutt, New Zealand. The large rays of the wood suggest it, like the type specimen [*X. lanuginosum* AEB 1001 (= PDD 92343)], was from a rewarewa (= *Knightia excelsa*).

Collector and identifier: Ann Bell

Collection date: 14 January 2008

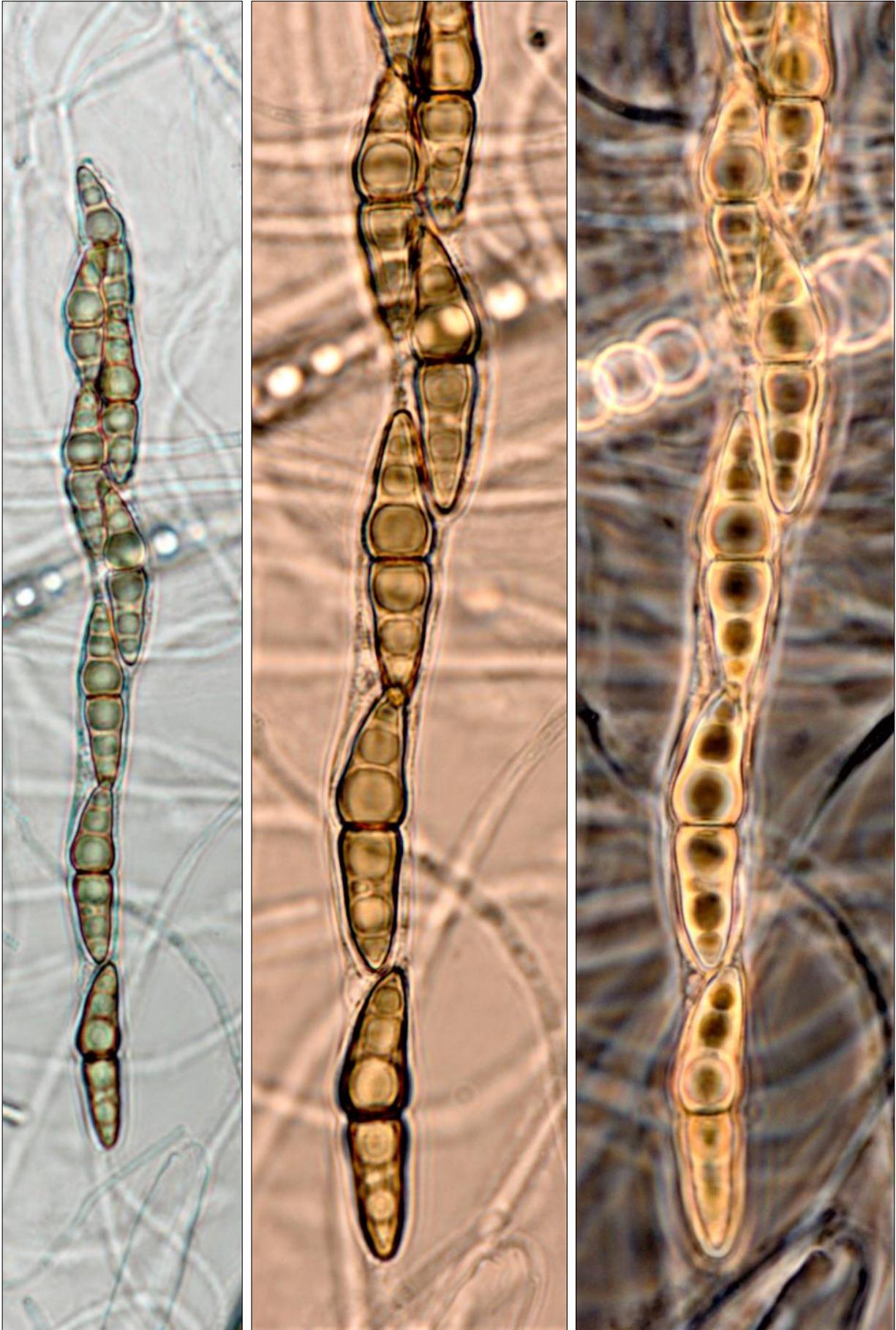
Voucher materials: Dried herbarium specimen AEB 1028 (= PDD 94206) accompanied by several Shear's mounting fluid (SMF) semi-permanent microscope slides; Dan's digitized photos of fertile asci in a water mount (15 January 2008) and ascospore germination digitized photos (20 January 2020) from Ann's SMF slides – using an Olympus BX51 microscope & Olympus DP25 digital camera; Ann's notes and drawings; Dan's brief description; culture submitted to CBS = CBS 123490

Dan's brief description: **Ascomata** dark, separate to clustered, superficial to somewhat submerged with clearly seen slot-like ostioles (like those seen in the type description but with fewer younger ascomata with the more obviously fuzzy tomentum), highly fertile with numerous long-stiped asci and pseudoparaphyses.

Pseudoparaphyses hyaline, smooth, septate with long unbranched portions (but with anastomosing and branching also), approx. 2 µm in diam. **Asci** long and narrowly clavate with 8 or fewer ascospores, these irregularly biseriolate in apical regions and often uniseriate basally (but variable and often overlapping and biseriolate throughout). The stipe long and attenuated, the apex rounded and splitting open prominently usually once longitudinally (occasionally with other smaller splits) upon ascospore discharge [as Ann has illustrated for the type specimen in the Australasian Mycologist 27(1) 2008 publication]. **Ascospores** 2-celled, biconic, straight to bent, somewhat asymmetrical, indented at the median septum, straw to darker straw colored, smooth, with 3 to 4 large uniseriate globose guttules in each cell in water mounts that decrease in size from the widest portion of the spores near the septum to its tapered extremities, mostly 26–30 × 6.5–7 µm.

Addendum: Ann succeeded in germinating ascospores on PCA (no antibiotics) from the fresh material. The germinations, both inside and outside the asci, are from one or both subapical extremities of the ascospore. These regions agree with the obvious locations of the germ pore areas in the type of *Xenolophium pseudotrichioides* and in *X. pachythele* AEB 1024 (= PDD 93161) from Stone Park (Sioux City, Iowa). These latter species have darker ascospores than *X. lanuginosum* which may explain why germ pores of *X. lanuginosum* are more difficult to see prior to germination. On 20 January 2008 Dan took digital photos of the SMF mounts which Ann had prepared from the germinating ascospores after 24 hours (from the time of seeding them onto PCA) and again after 72 hours. The following is information on these 7 photos. Germ tubes were mostly 3 µm wide.

- 1). 24 hrs., 100X obj., image #7, ascospore 32 × 8 µm
- 2). 24 hrs., 100X obj., image #8, ascospore 32 × 7 µm – a younger seemingly unpigmented ascospore
- 3). 24 hrs., 100X obj., image #9, ascospore 29 × 8.5 µm
- 4). 72 hrs., 40X obj., image #1 – one ascus with most of the ascospores germinating. Photos 5 & 6 are close-ups of the apical ascospores and the basal ascospores, respectively.
- 5). 72 hrs., 100X obj., image #4 – upper most portion of ascus in photo 4; apical ascospore 32.5 × 9.5 µm
- 6). 72 hrs., 100X obj., image #5 – lower most portion of ascus in photo 4
- 7). 72 hrs., 100X obj., image #2 – ascospores from a different ascus; ascospore 28 × 9 µm



***Xenolophium lanuginosum* AEB 1028. X40 & X100 objectives. (same ascus), Olympus BX51, water mount, brightfield & phase contrast, collection 14 Jan. 2008, (this photo taken the next day). Ascospores seen here are $26\text{--}30 \times 6.5\text{--}7 \mu\text{m}$.**

Photo 1
24 hrs.
Ascospore $32 \times 8 \mu\text{m}$

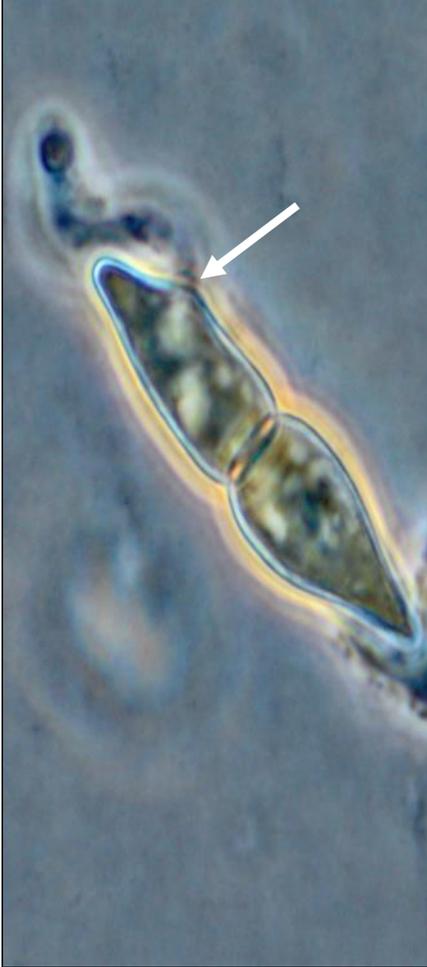


Photo 2
24 hrs.
Ascospore $32 \times 7 \mu\text{m}$



Photo 3
24 hrs.
Ascospore $29 \times 8.5 \mu\text{m}$

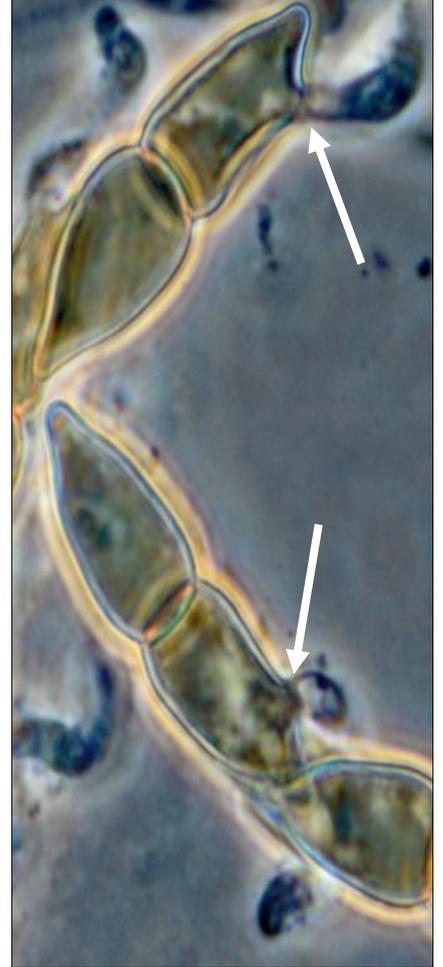
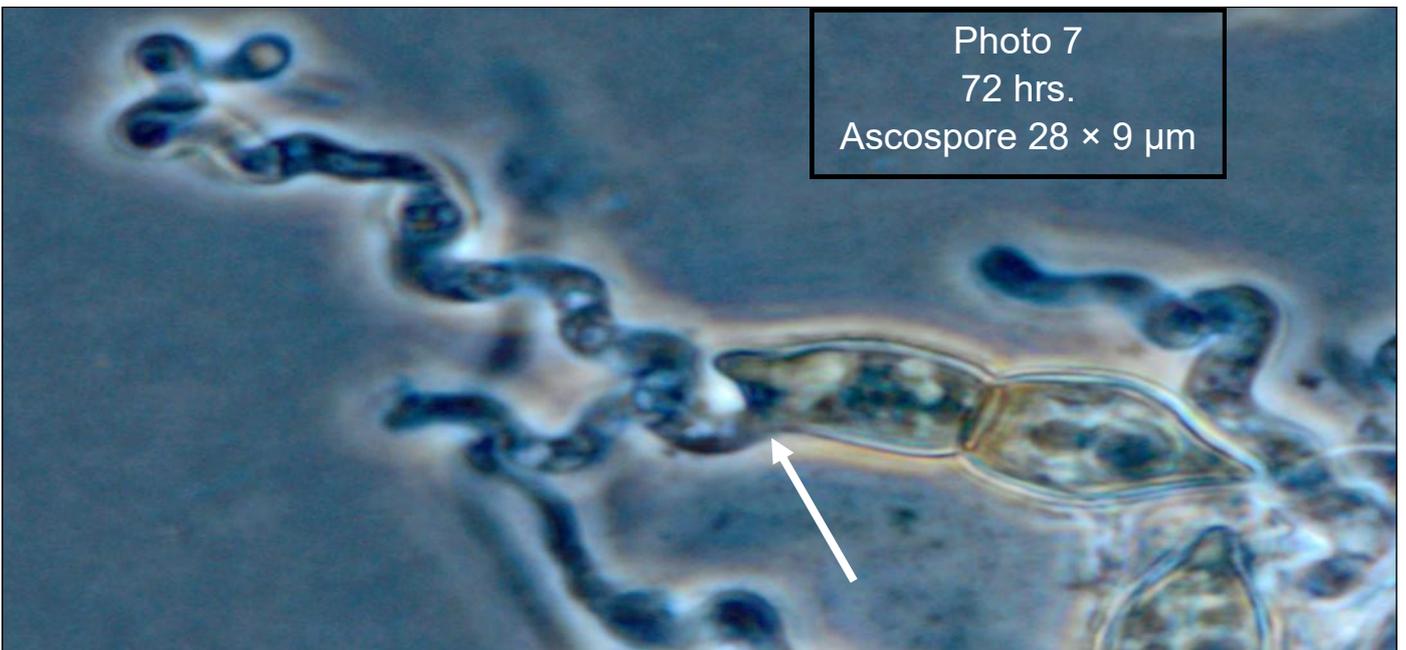


Photo 7
72 hrs.
Ascospore $28 \times 9 \mu\text{m}$



***Xenolophium lanuginosum* AEB 1028. Ascospore germination on PCA (25°C, 12 lt–12 dk), SMF mounts. Arrows indicate points of germination. Note zig-zag emergent germ tubes.**

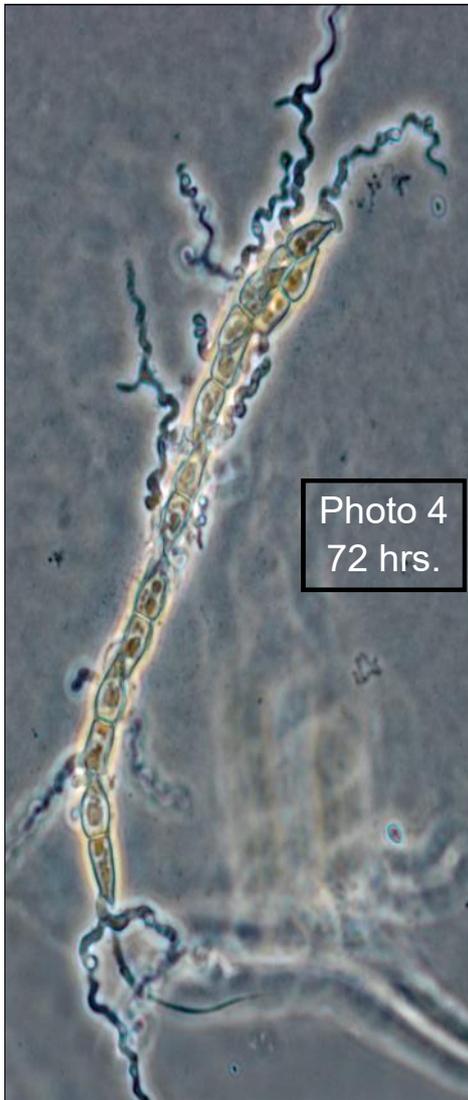


Photo 4
72 hrs.

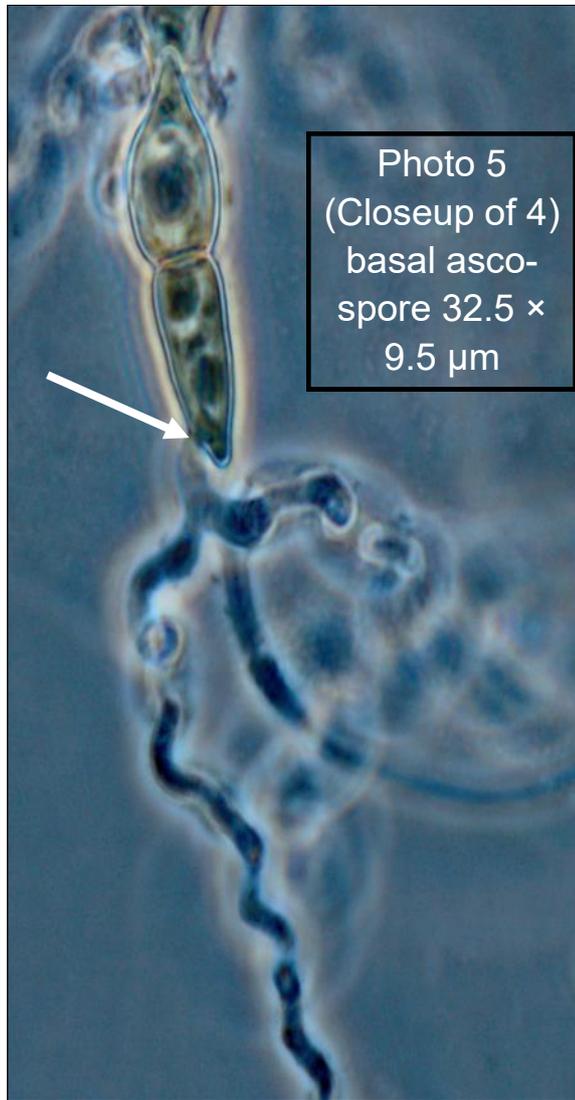


Photo 5
(Closeup of 4)
basal ascospore $32.5 \times 9.5 \mu\text{m}$



Photo 6
(Closeup of 4)
uppermost
portion of the
ascus

***Xenolophium lanuginosum* AEB 1028. Ascospore germination on PCA (25°C, 12 lt–12 dk), SMF mounts. Arrows indicate points of germination. Note zig-zag emergent germ tubes.**