Lophodermium guangxiense?

Neotypification of a previously described *Lophodermium* species from China

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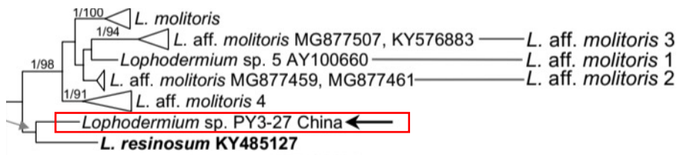
Abstract

- ***Lophodermium*** is a genus of endophytic fungi that live on the needles of pines (genus *Pinus*).
- A *Lophodermium* specimen collected by Oono and Salas Lizana on *Pinus yunnanensis* from China in 2018 has morphological characteristics very similar to ***L. guangxiense***, a species previously described from *P. yunnanensis* in southern China (see right column sketches under Morphology section; Lin et al. 1993).
- Based on the **morphological similarities**, it is likely that the sample collected is *L. guangxiense*.
- When the representative specimen of a species, or the **holotype** (usually stored in museums or public collections for further scientific research), is not available, a **neotype** may be designated using a specimen of the species found at a later time.
- This process is called **neotypification.**
- *L. guangxiense* does not currently have a holotype, so the sample collected may serve as an appropriate neotype.
- We sequenced the internal transcribed spacer (ITS) region from one of the specimens collected in 2018 and created a **phylogeny** to understand its evolutionary relationship.

Phylogeny



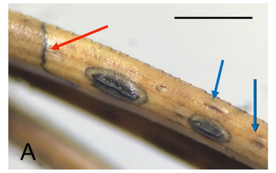
- Based on the ITS phylogeny, the sample collected in China is closely related to (but distinct from) *L. resinosum* found in red pine, or *P. resinosa*, which grows in northeastern N. America. *Pinus resinosa* is also a close relative of *P. yunnanensis* (host of PY3-27 China).

Scan for full phylogeny →

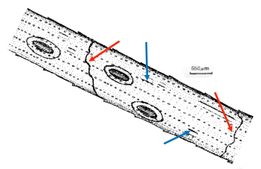
References

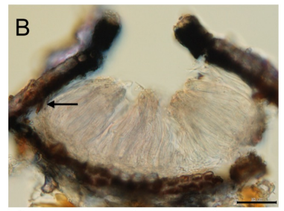
Lin, Y. R., et al. (1993). The Genus *Lophodermium* on Pines in the Southern Part of China II. Acta Mycologia Sinica, 12(1):5-11.

Morphology

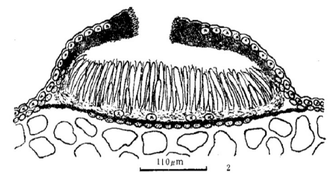


External view of ascocarp: zone line (red arrow) and conidiomata (blue arrows)

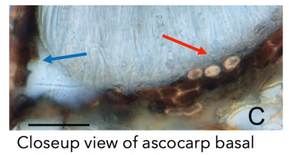

Surface of ascocarps; zone lines (red arrows) and conidia (blue arrows) on a needle



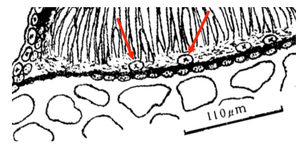
Ascocarp central transversal cross-section, arrow indicating remains of hypodermal cells



Transverse section in the middle of ascocarp



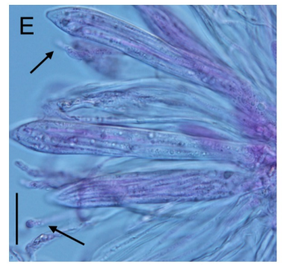
Closeup view of ascocarp basal wall: epidermal cells (red arrow) and remains of hypodermal cells (blue arrow)



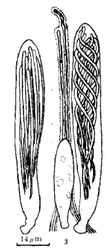
Closeup of ascocarp basal wall: epidermal cells (red arrows)

Ascospores contained in a gelatinous sheath (arrow)

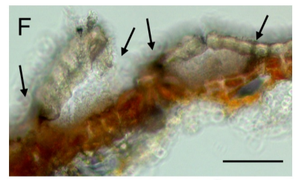
Ascospores contained in a gelatinous sheath



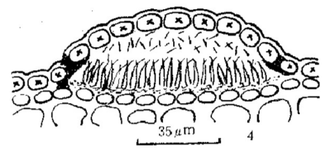
Immature asci and paraphyses (arrows)



Asci and paraphyses



Transversal cross-section of two conidiomata: the one on the left has been opened by one of the two dark, lateral slits (arrows)



Transverse section in the middle of conidia

BARS:
A. 0.1 mm
B, C, F. 50 µm
D, E. 20 µm