Fungal Diversity

Fungal Growth and Form

Hyphal extension of the ascomycete Neurospora crassa

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Hyphal extension of the ascomycete Neurospora crassa

Fungal micro-hydraulics:

- Reynolds number:
  \[ \text{Re} = \frac{\rho v L}{\eta} = 4.5 \times 10^{-5} \]

- Pressure gradient:
  \[ \frac{dP}{dx} = \frac{8 \pi J_2 \eta}{r^2} = 4.9 \times 10^{-4} \text{ bars cm}^{-1} \]

Vacuole movement through septal pores
Fungal micro-hydraulics:

Oil movement through septal pores

Aspergillus fumigatus
Stained with FM4-64
Asexual structures bearing conidia
(Optical sections and 3D reconstruction)

Neurospora crassa
Stained with FM4-64
Early stage of protoperithecium development

Neurospora crassa
Stained with FM4-64
Later stage of protoperithecium development
Ganoderma lucidum
Stained with FM4-64
Clamp formation

A time lapse study of Coprinopsis growing on a cube of poop by Kent Loeffler.

Moldy bread is cool
It is *Rhizopus stolonifer*. And, no, don't eat it!

Giving Homer Simpson a head of hair (courtesy of *Phycomyces blakesleeanus*)
Pilobolus Spore Discharge:
Launch speed: 9 meters per second
Measured maximum acceleration: 210,000 meters per square second
Estimated range: 2.9 meters

The Fastest Flights in Nature: High-Speed Spore Discharge Mechanisms among Fungi
Levi Yafetto, Loran Carroll, Yanlu Cui, Diana J. Davis, Mark W. F. Fischer, Andrew C. Henterly, Jordan D. Kessler, Hayley A. Kilroy, Jacob B. Shidler, Jessica L. Stolze-Rybczynski, Zachary Sugawara, Nicholas P. Money
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Illustration: Ernst Haeckel