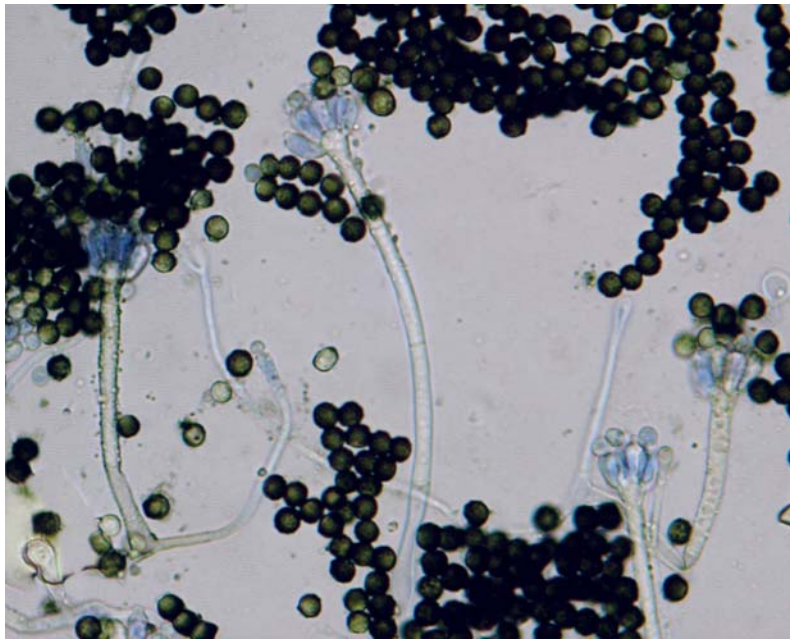


Mold of the Month December 2009

Memnoniella echinata sp.



Colony Description

On Malt-Agar growth medium (MA) (pH 6.5) – slow growing colonies, velvet-like, white at first and then becoming black-grey when sporulating. The reverse is beige-brown to grey-brown. Formation of an exudate at the centre during growth. The phialides are 3.5-5.5 x 9.5-11 μm , they are thin and smooth-walled. The septate conidiophores are 70-90 μm in length, slightly olivaceous and mostly rugose.



recto - 26°C



verso - 26°C

Microscopic Features:

The conidiophores are dark, simple, bearing at apex a cluster of thick, short phialides; conidia of *Memnoniella echinata* are very similar to those of *Stachybotrys*, dark, 1-celled, globose. The major difference between the two fungi is that the conidia are in long persistent chains (aggregated in slimy heads in *Stachybotrys*). Also the aerodynamic diameter of *Memnoniella* is smaller and it would be expected to have an even greater potential to penetrate deep into lungs than the conidia of *Stachybotrys*.

Ecology

Memnoniella echinata is a cosmopolitan fungus but is most commonly found in tropical and subtropical areas, usually in soils and plant debris but also inside buildings, especially on cellulose-based materials.

This species has been isolated from various substrates and habitats such as:

- paper
- textile (cotton, wool, jute)
- building materials
- wood fibre, pine cones
- atmosphere
- birds
- rhizosphere
- dead plants
- seeds
- tobacco

M. echinata inhibits the growth of *Neosartorya fischeri* in vitro. This fungus releases different mycotoxins and its presence inside buildings is potentially dangerous for people's health, all the more so its small-sized conidia can easily penetrate the trachea. *M. echinata* is considered part of the family *Stachybotrys* but its main difference is its long and dry conidia chains that are readily spread by the wind and drafts. *M. echinata* often is associated to *Stachybotrys chartarum*.

Memnoniella echinata is a mesophile fungus whose growth temperature is between 15°C and 30°C. The maximal spore germination temperature is 37°C.

Health Effect

Recent studies on mycotoxins revealed that *Memnoniella echinata* can have toxicity similar to that of some isolates of *S. chartarum*. Asthma and rhinitis is associated with exposure to *Memnoniella echinata*.