

## FUNGI RELATIVES – DO YOU KNOW THE DIFFERENCE? ... Neil Tucker



Slime Mould found at Pt.Roadknight

Have you ever heard of Slime Moulds or Water Moulds? Probably, without realising it, you have, at least the latter.

As I mentioned in an earlier article, there is no generally accepted system of naming fungi, and there are frequent name changes at every level, from species upwards, a state which also applies to some of the other groups of micro-organisms. In the past we grouped organisms with similar appearances together, but DNA sequencing, and other modern techniques, are re-writing the books – often, similar-appearing organisms are found to be completely different in origin. Slime Moulds and Water Moulds have traditionally been included with fungi, and despite the changes in taxonomy, are often covered in the same books, mainly for convenience sake.

**Slime moulds** are predators of microbes, and so are able to engulf and digest bacteria, yeast, fungal spores, and decaying matter. They are even closer to animals than are fungi. At times they can appear like fungi, but then break up and move around as amoebas, before joining up again. The photo shows one, which we found recently at Point Roadknight; it was almost the consistency of yoghurt.

### Water moulds

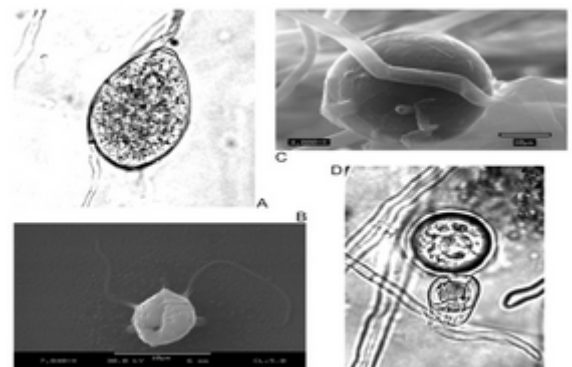
*Phytophthora* (from Greek *phytón*, “plant” and *phthorá*, “destruction”; “the plant-destroyer”) is a genus of plant-damaging Water Moulds *Oomycetes*, whose member species are capable of causing enormous economic losses on crops worldwide, as well as environmental damage in natural ecosystems.

The genus was first described by Heinrich Anton de Bary in 1875. Approximately 100 species have been described, although 100-500 undiscovered *Phytophthora* species are believed to exist. *Phytophthora infestans* was the infective agent of the potato blight that caused the Great Irish Famine (1845–1849), and still remains the most destructive pathogen of potato crops. In general, plant diseases caused by this genus are difficult to control chemically, and thus the growth of resistant cultivars is the main management strategy.

*Phytophthora* is very similar to true fungi, yet its evolutionary history is quite distinct. It is more closely related to plants than animals. Whereas fungal cell walls are made primarily of chitin, its cell walls are constructed mostly of cellulose.

*P. cinnamomi* lives in the soil and in plant tissues, can take different shapes, and can move in water. During periods of harsh environmental conditions, the organisms become dormant chlamydospores. When environmental conditions are suitable, these germinate, producing mycelia (or hyphae) and zoospores, which infect plant roots. Zoospores need water to swim through the soil, therefore infection is most likely in moist soils. Mycelia grow throughout the root absorbing carbohydrates and nutrients, destroying the structure of the root tissues, “rotting” the root, and preventing the plant from absorbing water and nutrients.

In our area, *Phytophthora* is responsible for the continuing loss of Grass- trees and to a lesser extent *Banksias* & *Isopogons*. It can be spread with soil on vehicles or footwear. It has been named among the “100 World’s Worst invaders”.



*Phytophthora* forms:  
A: Sporangia. B: Zoospore.  
C: Chlamydospore. D: Oospore.x

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