

# FUNGI

## MYXOMYCETES: THE SLIME MOULDS

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**D**O I hear you say "Ugh! Who wants to look at slime!", people tend to react that way. But a closer look will reveal the beautifully intricate and varied shapes of these tiny organisms, and their extraordinary life cycle - truly, fungi that walk!

Slime Moulds were first collected in the late 17<sup>th</sup> century and thought to be fungi. Since then, biologists in the Northern Hemisphere have collected and studied them with enthusiasm. They require moist, shady places with leaf litter, decaying logs and stumps, mulch, straw etc. The need for a moist habitat may partly explain why very few people know of their presence in Australia. A large part of our continent is very dry, and our extraordinary flora and fauna immediately take the eye of the observer.

There are about 900 species of myxomycetes (myxos) known at the moment and their scientific classification combines the Greek words for slime (myxa) and fungi (myketes). They exhibit two distinct life phases. During the feeding phase the plasmodium (slime) flows very slowly over the rotting substrate, feeding on bacteria and other bits of organic material (figs 1 & 2). The plasmodium can be red, white, orange, violet or yellow, depending on the species. In some, the cytoplasm can be seen streaming along the veins, slowing, reversing, then going forward again.

When the plasmodium is mature, it produces one of four types of fruiting bodies. The most common is the sporangium, which is a small, mainly spherical structure, stalked or sessile, and less than 1mm in diameter (fig 3). The second is the aethalium, which is a relatively large, cushion-shaped, sessile fruiting body. One species, *Fuligo*, is common around Perth (Fig 4). It appears as a yellow mass (a bit like scrambled eggs!) on grass and mulch, and can be 30 cm in diameter. The third type is sessile and can be wormlike, netted, elongated or branched. It is formed in the shape of the main veins of the plasmodium. The fourth type consists of many sporangia packed closely together, so that it superficially resembles an aethalium.

Identification of myxos depends principally on studying (with a microscope) the shape, size, colour and ornamentation of the fruiting bodies and spores. In Australia, there are very few text books which can help.

Areas south of Perth would appear to be the logical places to find myxos in the field, but those of you who live in drier areas have no need to feel excluded. As the spores are air-borne, they may well be present, but you have to provide them with the right conditions to grow in. Line a clean margarine (or similar) container with a piece of paper towel cut to fit and put a piece of bark (about



Fig 1 A lacy type of plasmodium (yellow).

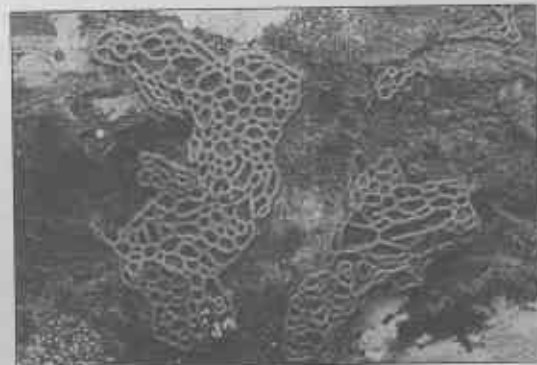


Fig 2 The plasmodium of *Hemitrichia serpula* (orange).



Fig 3 Sporangia of *Craterium leucocephalum* (white with orange stalk).



Fig 4 *Fuligo septica* in a Perth garden (creamy yellow).

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3cm x 5cm) on this. Fill with water, leave overnight, then pour off the water and put the lid on. Put the container on a south-facing window sill, not in direct sun. Inspect daily for a week, then every two or three days, then once a week. They can take up to three months to grow.

At the moment, not enough myxos have been collected to indicate either where they are, or how many there are in a particular area. However, from reports

overseas, it is known that some myxos have a tendency to grow in certain regions, and sometimes on specific substrates. As our trees are so different here, it will be interesting to see whether we have any myxos specific to our region.

Can you help? Perhaps you could look for myxos in your area? Any you find (or grow in a moist chamber as described above) should be allowed to air dry. The substrate can then be glued into a small box

with a lid for storage or transport. So little is known about slime moulds that anything you collect could make a real contribution to our knowledge of local biodiversity.

You could send them to me at the Herbarium, LB 104, Bentley D.C., WA 6983 where I work as a Volunteer two days a week. If you would like to know more, including packaging for transport, ring 9334 0500 and leave a message. I will return your call as soon as possible.