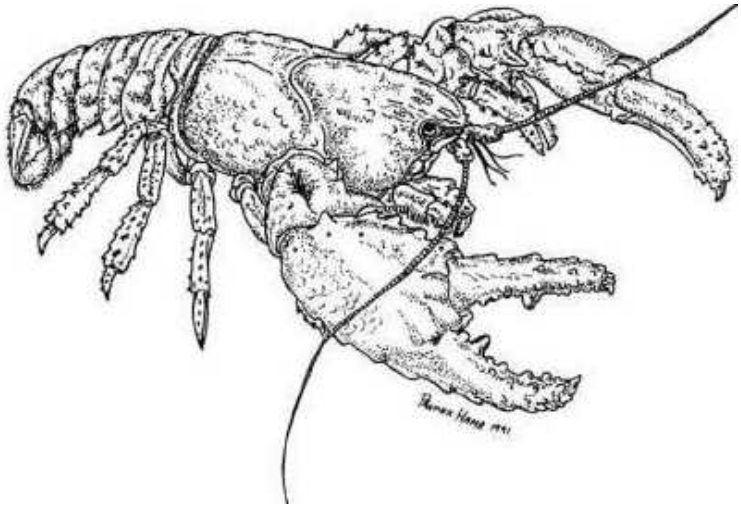
Disjunct Naturalists

WEBSITE OF THE CENTRAL NORTH FIELD NATURALISTS



Slime mould log

by **Sarah Lloyd**

15th August

Badhamia utricularis
mature

August 15th 2013

Badhamia utricularis: a fungivorous slime mould

The heavy rain in May 2013 was enough to saturate logs, litter and other coarse woody debris. This resulted in a good flush of fungal fruiting bodies but very few slime moulds. Because I had observed numerous slime moulds after each bout of wet weather during the previous few months I was expecting that pattern to continue. However, research in the Northern Hemisphere indicates that although slime moulds can appear at any time of the year, they tend to peak in spring and summer. It is likely that it would be the same in the Australia, something that more field research should determine.

sclerotium reactivated

Although disappointed not to find some fruiting bodies I had the rare opportunity to watch a sclerotium as it was reactivated after rain, and then to track the progress of numerous active plasmodia as they inched along a tangle of dogwood and blackwood branches in the swamp, an area that is close enough to visit several times each day. On May 24th I left Tasmania for the Fungimap conference and thought little more about it.

reticulate capillitia

When I returned on June 30 there was a spectacular display of fruiting bodies. On the dogwood and blackwood branches were eleven clusters of stalked sporangia of *Badhamia utricularis* at various stages of development: there was one cluster of young orange sporangia still in the process of maturing, and eleven clusters of mature sporangia that had completely dehisced (i.e. fully matured and released their spores) to reveal the intricate network of limey 'badhamoid' threads characteristic of the genus. There were also twelve active plasmodia. However, as two additional species (*Physarum viride* and *P. album*) were

observed on the log on July 22nd, the plasmodia were not necessarily those of *B. utricularis*. (Slime moulds are impossible to identify at the plasmodial stage.)


immature

It is not known what prompts plasmodia to transform to fruiting structures. In the laboratory changes in ambient conditions such as pH, moisture and temperature, or exhaustion of the food supply have been suggested as triggers. My observations of the mature *Badhamia utricularis* fruiting structures right next to actively feeding plasmodium, which are all experiencing the same conditions, suggests that other mysterious forces are involved.

After the mid-May appearance of the slime mould plasmodia, I recalled that mature sporangia of the very same species had appeared about two metres away on the very same blackwood log in September 2010 and I had collected a sclerotium of *B. utricularis* in the mistaken belief that it was *Hemitrichia serpula*, a very distinctive bright red slime mould whose fruiting structure is a plasmodiocarp, i.e. it resembles the veins in a plasmodium.

The log in question is the smaller of two trees (conjoined at the base) that fell during stormy weather in about 2008. When they fell they brought done several paperbark (*Melaleuca ericifolia*) and dogwood (*Pomaderris apetala*). The middle section of the log is about 130 cm off the ground and therefore a good height to study. Initially, in order to get better access, I had to cut back a large cutting grass (*Gahnia grandis*), clear away a tangle of twiggy branches and redirect a vigorous *Parsonsia brownii* vine. Because the upper section of log was even more entangled, I'd only given it a cursory glance. The lower end is also difficult to access because of roots, fallen trees and understorey vegetation.

The log fell against a 26 metre high blackwood tree and the *Parsonsia* vine, took advantage of the gap in the canopy and has almost reached its leafy crown. This creates problems for photography: the slightest breeze causes the tree to sway with a ripple effect though all substrates. To add to the problem, the plasmodia are currently on branches that are above the height that is convenient for tripod photography.

Badhamia utricularis is a great slime mould to study because it has relatively large (0.5 to 1.0 mm diameter) usually stalked globose, ovate or pear-shaped sporangia. It seems to remain in the field longer than most other species, and if the sporangia do get a fungal infection the long thread-like stalks are distinctive enough for identification. In addition, its sclerotium, the dormant stage, is pale orange and quite easy to see on a log – I am yet to find the sclerotia of any another species.


plasmodium on toothed fungus

I had read that *B. utricularis* is one of a handful of known fungivorous slime moulds so was interested to see which fungi species it may be targeting. It has been recorded growing in the presence of several fungal species – most commonly *Stereum hirsutum* and *Phlebia radiata* – but it will devour other agarics and brackets. (It contains a cocktail of enzymes known as 'mycolase' which have been investigated as possible controls of animal pathogens.)

I have photographed it twice on an *Irpex*-like toothed fungus with 'irregular tubular or flattened tooth-like pores' (Fuhrer p. 247). The first time was on the underside of the blackwood log. The most recent

encounter was on August 10th when a gelatinous plasmodium thickly covered approximately 70 x 40 mm of the 'teeth' on a eucalypt log on which the blackwood was leaning. By the following day a spectacular display of fruiting bodies hung down from the fungus.


maturing


on toothed fungus

References
- Fuhrer, B., *A Field Guide to Australian Fungi*, Bloomings Books Pty Ltd (May 2005) ISBN-10: 1876473517
- Ing, B. 'The phytosociology of myxomycetes' Tansley review No. 62 *New Phytol* (1994), 126, 175-201 p. 176
- Keller H.W. and Everhart S.E. (2010), 'The importance of Mycomycetes in Biological Research and Teaching', *Fungi* Volume 3:1 Winter 2010.
- Madelin, M.F.(1984) 'Presidential address Myxomycete data of Ecological Significance' *Trans. Br. Mycol. Soc.* 83

Page URL: https://www.disjunctnaturalists.com/slime-mould-log/log5.htm

Back to top

Home

Slime Mould Log -
Background

References