

Mycological Notes 4: a fungus on a fungus on a fungus on a tree

Jerry Cooper, June 2012

Great fleas have little fleas upon their back to bite them, and little fleas have lesser fleas, and so on ad infinitum. De Morgan, 1872.

I remember that from my grammar school maths book introducing the idea of regression (Morgan was a mathematician). Of course it does apply more logically to the natural world and to the fungi especially. On the Riverton foray at Lake Monowai I collected a bracket fungus on a beech tree, which turned out to have a fungus growing on it, which turned out to have a different state of the same fungus growing with it, which turned out to have a fungus growing on it.

Fungus # 1 – *Fomes hemitephrus*

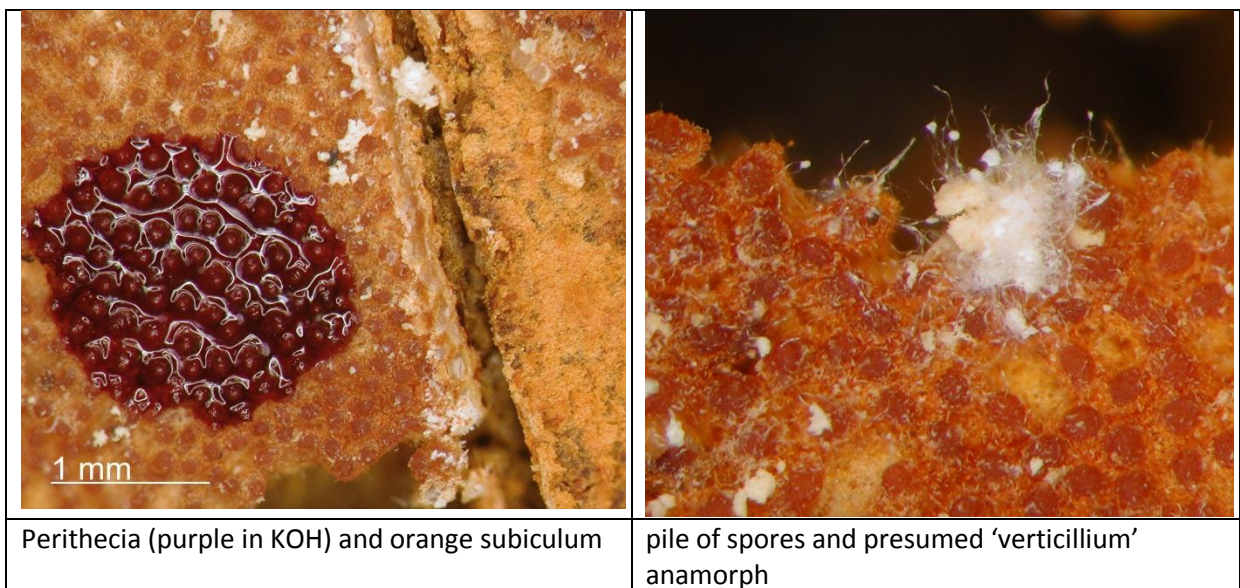


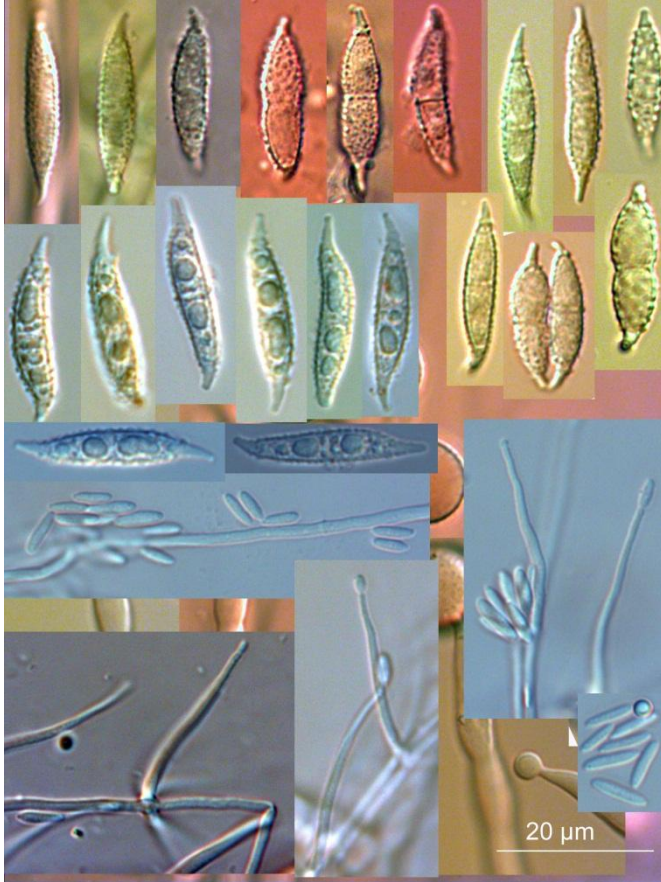
This is *Fomes hemitephrus* growing on a standing trunk of mountain beech. It's a hard bracket fungus with an undulating ridged cap. It has an orange layer just below the cap tissue when fresh.

Fungus #2 – *Hypomyces c.f. aurantius*



This is a parasitic ascomycete in the genus *Hypomyces* growing on the dead bracket (a hyperparasite). Some *Hypomyces* species are parasites of different kinds of fungi and come in a range of colours. An equally bright orange one (*H. lactifluorum*) infects *Russula* and *Lactarius* and is considered an edible delicacy under the name Lobster Mushroom. The usual one on polypore fungi, with this bright orange colour, which turn purple with Potassium hydroxide solution is *H. aurantiacus*. Like many ascomycetes *Hypomyces* have a distinctive asexual anamorph states. *Hypomyces aurantiacus* should have a *Cladobotryum* anamorph which is often present and easy to recognise microscopically, with broadly ellipsoid 1-septate conidia. In this case I couldn't find it. In fact this *Hypomyces* was rather obviously associated with a fluffy fungus that microscopically looks like a *Verticillium*.





Spores of *Hypomyces* and associated conidiophore/conidia of '*Verticillium*'.

I can find no record of any *Hypomyces* with a *Verticillium* anamorph. However, *H. aurantiacus*, from sequence analysis (Poldama, 2000), is known to be close to *Cladobotryum gracile* (Poldama, 1999), with no known teleomorph (sexual state). *C. gracile* looks identical to my '*Verticillium*' so perhaps here we have the missing teleomorph? Or perhaps just another hyperhyperparasite.

Fungus #3 – *Rhinotrichella globulifera*



This is another asexual fungus growing on dead portions of the *Hypomyces* (and in so in this case is a hyperhyperparasite) and it has distinctive conidia.

It is *Rhinotrichella globulifera* which is a known fungicolous hyphomycete, but not previously recorded from New Zealand. It is clearly different from a range of similar fungi (*Basifimbria*, *Stenocephalopsis*, *Acrodontium*, *Haplotrichum*, *Hansfordia/Dicyma*).

References

Poldama, K.; The genus *Hypomyces* and allied fungicolous fungi in Estonia. 1. Species growing on aphylophoralean basidiomycetes.; *Folia Cryptog. Estonica.*; V34, 1999, pp15-31.

Poldama, K.; Generic delimitation of the fungicolous Hypocreaceae; *Studies in Mycology*; v45; 2000, pp83-94.