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Title: Solving fungal problems in heritage collections

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images using PhotoShop. I had, in fact done this myself to get an image of an insects eye using pictures taken down our museum microscope. It was kind of reassuring that the decidedly jury-rigged effort that I had used was actually exactly the same as that used by the professionals. To be fair, though, I should point out that they have now acquired some software that very cleverly does this automatically, turning what was once hours of painstaking and eye-straining work into a push of a button job.

We finished off by going down to the conservation labs, where Lorraine Cornish and Dervilla O'Dwyer showed us how they are dealing with the cleaning of a set of glass models of microfossils. These are the most beautiful and unbelievably delicate creations, some consisting largely of scores of fine glass filaments. The mere contemplation of trying to clean such objects would be enough to make me want to go and lie down for a long time, but this is currently a research project for some of the conservation team, to try and establish the most effective ways of restoring these stunning items.

So, all in all, a fascinating workshop, and one which actually may turn out to have a practical benefit. I had always assumed that trying to use microfossils was beyond the realms of possibility for mere mortals such as myself, although I have looked at the possibility of sectioning limestones to see the fossils contained therein. However, after discussing things with the staff there, I have decided to see if I can extract some fossil from the abundant supply of mudstones we have in our area. People are fascinated by fossils in the first place, and to be able to show them these tiny animals and the exquisite detail they exhibit would be a most unusual and popular project. But I may well need some help, so I may be heading back for more advice.

Solving fungal problems in heritage collections
- Simon Moore, Natural Sciences Conservator

All day seminar by Mary-Lou Florian at the Natural History Museum,
6th November 2003.

Based around her rather cryptically titled book *Fungal Facts* (publ. *Archetype Publications* 2002) and which was part of the seminar package, Mary-Lou Florian of the Royal British Columbia Museum in Victoria, gave an intense and mind-boggling day of facts about the way that fungal organisms affect and grow in the collections that we tend. Assisted by James Black of *Archetype Publications*, who wrestled with perverse carousel projector magazines, she took us back to basics, outlining many of the facts and factors that we, as conservators, once (may have) learned but largely forgotten. This included the definitions of humidity and the building blocks of water physics and how this can both affect and effect fungal growth. We were also reminded about differentiating between slow freezing causing membrane-piercing ice crystal growth as opposed to blast freezing which preserves cell membrane integrity and how glycerol prevents freezing by acting as a reducer for water eutectic.

Since she was talking about ascomycete fungi and their forms of reproduction we learned much about conidial formation, their differentiation from spores and how they can be easily distributed among all sorts of heritage media, especially paper. We looked into the staining of conidia, using eosin, to test their viability and their causing fox spots on paper and how to differentiate from iron spots and that such fungal growth usually causes aes-

thetic rather than actual damage. We looked at pictures from both light and scanning electron microphotographs differentiating fibres and microfibrils from hyphae and conidia from other related bodies.

Conidia will soon find their way onto damp tissue

On the preventive side she talked about the avoidance of creating microenvironments suitable for fungal growth such as the oft-overlooked problem of placing watercolour paintings against cold walls in summer. The prevention of dust and how it is attracted along light beams, which act as dust pathways and that dust acts as a carrier of infesting conidia as well as carrying nutrients for fungi. We were also reminded about avoiding cross- or re-contamination when moving objects that have been sterilised.

For the organic/biochemists there was even a moment discussing β-glucans and their relationship with melanin and their relevance in slime, also how to remove melanin-based pigment staining from media using (1-3 glucanase) enzyme chemistry. We also touched on the removal of such staining bodies using chamois leather or by using laser cleaning.

Mary-Lou kept the pace going all day but finding her English audience rather shyer than she is used to and tending not to reply to open questions, she had to coax answers from us!

Altogether it was a thorough fact-filling day, even if it was rather like a university mycology lecture. I know that some found it too technical and 'back to basics' where they were hoping more for basic tips on collection-related and more updates on environmental problems.

Bearing in mind the attendance fee, I found that the seminar room was not up to standard since the presentation suffered from daylight infiltration, too basic projection equipment and interfering machinery noise. I found, however, that Mary-Lou was a powerhouse of information and not once did I find my eyelids drooping!

NOOX3

- Suzanne Lewis: Lead Curator & Conservation Officer
Entomology Department, The Natural History Museum, London

NOOX3 a two day conference on anoxic and reduced oxygen environments hosted by the British Library and the Natural History Museum, London on the 3rd-4th November 2003. The conference was co-ordinated by Chris Collins, The Natural History Museum, London and David Jacobs, from The British Library. This was the third conference on this subject and was made up of one day of lectures at the British Library and one day of workshops at the Natural History Museum.

The lecture programme was interesting, informative and varied. The first talk given by