



## UNIVERSITY OF LEEDS

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19.9.2011

### **Eva Kozubikova; report on PhD thesis.**

This thesis focuses on detection and diversity of crayfish plague and falls into two areas dealing with detection and patterns in the field, and with diversity of the causative agent. These parts are drawn together in the synthesis of the introduction.

Chapter 1 presents a survey of introduced crayfish for plague in the Czech Republic. Of particular interest is the analysis of factors that predict plague prevalence and the finding that melanisation is not a significant predictor of infection, a finding that has implications for conservation and control. The lack of association with body length is also of interest. In the discussion, Eva suggests that differences in density may be important for disease transmission and it would be interesting to incorporate density in the model. Chapter 2 also shows widespread occurrence in Hungary.

Chapter 3 looks at temporal variation in prevalence in three populations, reporting seasonal changes and an overall decline in one. The authors discuss the possibility that prevalence will decline as a result of parasite loss at moult. I would be interested to hear Eva's thoughts on moult timing of this species (does it show synchronous moulting as found in some other spp).

Chapter 4 revisits previous samples to compare detection levels using standard and rtPCR. Levels of detection were higher with rt PCR. Although costs mean that this technique is unlikely to be useful for routine field sampling, the paper is useful in demonstrating that parasitism may be underestimated in surveys, another important finding is that standard pcr based approaches were unlikely to find false positives.

Chapter 6 reports on a new strain of *A. astaci* based on the novel sequence of DNA isolated from two *O. limosus*. Eva discusses tracing the source of plague outbreaks in native species, and I would be interested to ask whether she has looked for evidence of this novel strain in native populations that are close to/sympatric with spiny cheeked populations. Also, it would be interesting to hear how similar this sequence was to the one (with a different genbank number) that was used to reconstruct the phylogeny in chapter 6. Chapter 6 moves on from the ecological survey approach of the previous chapters to look at the evolutionary relationships amongst the *Aphanomyces*, demonstrating separation between animal and plant parasitizing species. Such papers often have multiple authors, each making a distinct contribution and I should be interested to ask what was Eva's contribution to this paper.

There are a number of published and submitted papers to peer reviewed journals and I have no hesitation in recommending that it contains sufficient and novel work for a PhD. I enjoyed reading this thesis and was pleased to see that many of the chapters have already been published. I am disappointed to have missed Eva's defence and hope to meet her at conferences in the future.

A handwritten signature in black ink, appearing to read 'Alison M. Dunn'.

Dr Alison M. Dunn