

Sant Carles de la Ràpita, 22nd August 2018

Report on Doctoral Thesis

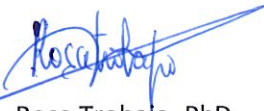
PhD candidate: Paula Urbánková
Title: Genetic diversity within pennate diatoms: Implications for taxonomy and ecology
Thesis supervisor: Jana Kulichová, PhD.

Overall assessment

This is a well-written thesis investigating the nature and significance of the morphological and genetic diversity in two groups of freshwater, benthic diatoms: *Frustulia* and *Eunotia*. The work comprises four journal articles (three accepted and one in preparation) together with a brief introduction and discussion. The thesis applies a range of appropriate and, in part, quite novel approaches including morphological, morphometric, phylogenetic, experimental physiological. This has yielded some interesting results, which are discussed in relation to the field. In my opinion, the candidate should be allowed to proceed to the oral presentation and defence of her thesis.

Some questions for the candidate:

- If a barcode is a short region suitable for species identification, does this mean it is also useful for species delimitation?
- Your barcoding work was published in 2013 and many advances have been made since then in diatom barcoding and metabarcoding. Has your evaluation changed as a result of these advances? And if so how?
- In the work of paper III, you started by defining the species/lineages from the molecular data and then you looked for and found the morphological features that characterize them. Do you think it would have been different or possible to start with morphology and use morphology alone to do the nice, thorough work you did for this paper?
- Since your strains in paper IV were not gradually acclimatised to the lowest and highest pH levels studied but transferred to the final pH from pH 6, do you think perhaps your experiment tested more the ability of the strains to cope with changes in pH rather than with particular levels (high or low) of pH?



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