



University of Colorado
Boulder

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Dr. Kateřina Kopalová
Department of Ecology
Charles University
Praha, Czech Republic

Dear Kate,

I reviewed the M.S. thesis of Marie Bulínová, *A comparison between paleo and recent freshwater diatom communities from Vega Island, Antarctica*, submitted to Charles University, Faculty of Science.

The thesis is a thorough investigation of the features of diatom communities across a range of habitats in from the Maritime Antarctic. The research required for this thesis demonstrates that Ms. Bulínová has obtained a rigorous M.S. graduate training and is already contributing to the broader scientific community in her work (Bulínová et al. 2018). My comments that follow do not need to be addressed for acceptance of the thesis; they are simply my observations, reactions, and suggestions for consideration in future publications.

Observations, reactions, and suggestions for consideration

What taxa were determined to be cosmopolitan? How was that decision made? On page 32, there is the implication that the decision was based on, “The identification and biogeographical distribution of diatom taxa was based on the recent *Iconographia Diatomologica* volume by Zidarova et al. (2016), which is specific to the Maritime Antarctic Region”, however, it would be helpful for the reader to know if that volume was the source of cosmopolitan distributions.

Figure 2.6 is an interesting dot plot. What decisions were made to order the species on the y-axis? I would be interested to see the species ordered by genera. For example, it would be meaningful to observe how *Luticola* species are grouped. For future publication, order the figure legend and figure in the same way. As it is shown now, the figure legend presents the sites (ponds, mosses, seeps and streams) in a different order than the figure (ponds, streams, mosses and seeps).

Page 44. One of the conclusions of the first section of the thesis is that a new species of *Hantzschia* is described, but the species is not described until the next chapter.

There were a few minor English grammatical points that should be corrected for submission of manuscripts. For example, “*Psammothidium* and *Pinnularia* are sparser...” should read “*Psammothidium* and *Pinnularia* are more sparse...”

Chapter 3 includes an excellent publication, “Three new *Hantzschia* species (Bacillariophyta) from the Maritime Antarctic Region” in the journal *Phytotaxa*. I consider this to be a particularly difficult genus, and the publication is thorough, informative, and an important contribution to the diatom literature.

Chapter 6 presents differences between the diatoms in the sediments of two lakes that are near one another. Diatom assemblages are found to differ between the two lakes, with the conclusion that “suggesting different histories for each lake”. From the data presented however, I do not see support for that conclusion. It could be that the lakes differ in depth, or source of water, or a variety of parameters. The sediment profiles are not shown, so it is not clear if the history is, indeed, differing for each lake.

It is my pleasure to support the acceptance of the thesis of Marie Bulínová for award of a Master of Science degree from Charles University.

Sincerely,



Sarah A. Spaulding, Ph.D.
INSTAAR Fellow, University of Colorado