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Official review

for the PhD dissertation of Géza Balázs Selmeczy PhD student, entitled "*Biodiversity of phytoplankton in Lake Stechlin (Germany)*" .

The standing waters macrocosm research during the past 25 years with spectacular results expanded our understanding of surface waters. To date, the scientific interest palette occupies an important place in their research especially if it contains relating to experimental climate change. Thus, the choice of the theme of the particular field direction is one of the most topical national and international context as well.
The candidate performed a quality work, and it is presented written form is excellent. The literature review section is excellent. The material and methods chapter is adequate and follow the theme of choice and international trends. The methodology has scientifically sound well and described in a way that allows reproducing the experiments. It can be established that the formal evaluation of the thesis, the study and the layout of the chapters are well proportioned and the language is precise and easy to read. The thesis contains very expressive way of illustration and edited in high quality. The thesis meets the formal aspect, formulated against the doctoral thesis requirements.
The results and all the thesis points generate significant new knowledge in the scientific area. These are follows:

- Extreme weather events, which are able to reach and erode the thermocline have a drastic effects on the phytoplankton community of Lake Stechlin.
- Deepened thermocline (two meters) has a significant effect on the phytoplankton community.
- The species number and biomass of cyanobacteria increase in Lake Stechlin which raise the concern about potential toxicity.
- Equilibrium conditions can offer spatial- and niche segregation for DCM-forming cyanobacteria.

The results discussed in relation to the research of others, and the results demonstrate a good understanding of the implications of the work in a broader scientific context.
Additional suggestions / comments on the dissertation thesis I that wrote and sent to the candidate before the preliminary defence were done, which suggestions / comments accepted.

In summary, the candidate made a high-quality, valuable dissertation, which I support, and rating, "summa cum laude". The candidate's contribution to the research and publication(s) sufficiently large to "award him" with a PhD degree.

The questions for the dissertation are as follows:

1. The candidate mentioned in the first part of the results chapter the simulation of extreme weather events resulted an immediate increase in nutrients content. What kind of nutrients are covered with this statement?

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2. Also mentioned in this chapter that summer storms have a significant effect on the phytoplankton community dynamics which further effects may result changes into the higher trophic levels, thus affecting the rate of sedimentation, as well as the biogeochemical cycles of the lake. Please, detailed it all, how this phenomenon can affect on / change the sedimentation rate and biogeochemical cycles?

I wish the candidate continued success and pleasures in a promising career.

Debrecen, 19th of February, 2017.

Sincerely:

István Grigorszky
associate prof.