

# **Cyanobacteria in Kenyan Rift Valley lakes – a biological and toxicological study**

Dissertation

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Andreas Ballot  
aus Eindhoven/NL

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1. Gutachter: Prof. Dr. Klaus Hausmann
2. Gutachter: Dr. habil. Lothar Krienitz

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### List of original articles

This thesis is based on the following original publications and submitted manuscripts. They are referred to in the text by their Roman numerals.

- I Krienitz, L., Ballot, A., Wiegand, C., Kotut, K., Codd, G.A. and Pflugmacher, S. (2002): Cyanotoxin-producing bloom of *Anabaena flos-aquae*, *Anabaena discoidea* and *Microcystis aeruginosa* (Cyanobacteria) in Nyanza Gulf of Lake Victoria, Kenya. *J. Appl. Bot. - Angew. Bot.* 76: 179-183.
- II Ballot, A., Pflugmacher, S., Wiegand, C. and Krienitz, L. (2003): Cyanobacterial toxins in Lake Baringo, Kenya. *Limnologica* 33: 2-9.
- III Krienitz, L., Ballot, A., Kotut, K., Wiegand, C., Pütz, S., Metcalf, J.S., Codd, G.A. and Pflugmacher, S. (2003): Contribution of hot spring cyanobacteria to the mysterious deaths of Lesser Flamingos at Lake Bogoria, Kenya. *FEMS Microbiol. Ecol.* 43: 141-148.
- IV Ballot, A., Krienitz, L., Kotut, K., Wiegand, C., Metcalf, J.S., Codd, G.A. and Pflugmacher, S. (2004): Cyanobacteria and cyanobacterial toxins in three alkaline Rift Valley lakes of Kenya - Lakes Bogoria, Nakuru and Elmenteita. *J. Plankt. Research* (in press).
- V Ballot, A., Krienitz, L., Kotut, K., Wiegand, C., and Pflugmacher, S. (2004): Cyanobacteria and cyanobacterial toxins in the alkaline crater lakes Sonachi and Simbi, Kenya. *Harmful Algae* (in press)
- VI Ballot, A., Dadheech, P. and Krienitz, L. (2004): Phylogenetic relationship of *Arthrospira*, *Phormidium*, and *Spirulina* strains from Kenyan and Indian waterbodies. *Arch. Hydrobiol. Suppl./Algological Studies* (in press).

All articles are written by the first author. The contributions of the co-authors are as follows:

- I Physico-chemical measurements and determination of phytoplankton organisms and biomass were conducted by Andreas Ballot. Determination of cyanotoxin variants was contributed by Stephan Pflugmacher and Geoffrey A. Codd. The results were discussed by all authors.
- II Physico-chemical measurements and determination of phytoplankton organisms and biomass were conducted by Andreas Ballot. Determination of cyanotoxin variants was contributed by Stephan Pflugmacher. The results were interpreted and discussed by all authors.
- III Physico-chemical measurements were conducted by Andreas Ballot. Determination of cyanobacteria and biomasses were conducted by Lothar Krienitz and Andreas Ballot. Determination of cyanotoxin variants was contributed by Stephan Pflugmacher and Geoffrey A. Codd. The results were interpreted and discussed by all authors
- IV Physico-chemical measurements and determination of phytoplankton organisms and biomasses were conducted by Andreas Ballot. Determination of cyanotoxin variants was contributed by Stephan Pflugmacher and Geoffrey A. Codd. The results were interpreted and discussed by all authors
- V Physico-chemical measurement and determination of phytoplankton organisms and biomass were conducted by Andreas Ballot. Determination of cyanotoxin variants was contributed by Stephan Pflugmacher. The results were interpreted and discussed by all authors.
- VI Cultures were provided by Andreas Ballot and Pawan Dadheech. Design of experiments and practical work was done by Andreas Ballot and Pawan Dadheech. Alignment and phylogenetic analyses were done by Andreas Ballot. The results were interpreted and discussed by all authors.

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