UNEXPECTED HIGH DIVERSITY IN *CHAETOCEROS*

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Chaetoceros is one of the largest marine diatom genera with more than 400 described species. It is ecologically important due to a cosmopolitan distribution of the genus and a frequent and abundant occurrence of many species; sometimes even in bloom proportions. Species identification is often problematic, due to species being similar and intermediate forms occurring. Looking into the diversity of *Chaetoceros* we focused on a few sections, e.g. on the section Dicladia, more commonly known as the "lorenzianus" group, comprising *C. lorenzianus*, *C. decipiens* and *C. mitra*. The two former species are reported occurring from tropical waters to polar areas, the latter restricted to cold waters. Species delineation is extremely problematic, with morphological characters used for delineation having changed over time. Based on detailed morphological studies, studies of life cycle stages and analyses on molecular data of cultures isolated from Arctic, temperate and tropical areas, we found a diversity being >100 % larger than previously described. Characters for differentiating the species in the "lorenzianus" group will be discussed, as well as the distribution of the species. Resting spores proved to be an important taxonomic character. Considering the unexpected high diversity in a group of globally distributed, frequently recorded and characteristic group of species, one can only speculate on the diversity hidden in the diatoms as a group.