CROSSING THE FRESHWATER → BRACKISH-WATER/MARINE BOUNDARY: NEW INSIGHTS, SUCH AS MORPHOLOGY, BIOGEOGRAPHY AND MOLECULAR DATA, FROM THALASSIOSIRACEAE.

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Diatoms likely originated in the Mesozoic, however there is still little information on the initial habitats of diatoms. Commonly accepted hypothesis proposed diatoms crossed a uni-directional barrier, with the most probable colonization events proceeding from marine→freshwaters. It was suggested that genera in diatoms are stenohaline and the euryhalinity-effect can be caused by not well resolved taxonomy; in a few species a modern 'leakage' from brackish-water→freshwater was suggested. Now the euryhalinity in diatoms is reported not only as an artefact of classification, but as a real phenomenon with examples in raphid, araphid and non-pennate diatoms. Further, three independent re-colonisations of the marine habitat, two of which led to speciation events are suggested from molecular data (in Stephanodiscaceae-Thalassiosiraceae). From fossil evidences a relatively recent colonisation event from freshwater→brackish water/marine is proposed; within a linkage selected as of freshwater origin in traditionally marine Thalassiosiraceae (see *Conticribra* Stachura-Suchoples & Williams; Stachura-Suchoples & Williams, 2009).
Thus, this study presents the concept of the genus *Conticribra* (Thalassiosiraceae) and further focuses on several modern, euryhaline species in Thalassiosiraceae raising the question on possible recent colonisation event through the salinity gradient and its direction.

References:
Stachura-Suchoples & Williams, 2009. Description of *Conticribrus trescirculus*, a new genus and species of Thalassiosirales, with a discussion on its relationship to other continuous cribra species of *Thalassiosira* Cleve (Bacillariophyta) and its freshwater origin. *Eur*. *J*. *Phycol*., 44: 477–486.