ON THE MORPHOLOGY AND PHYLOGENY OF THE DIATOM GENERA RHIZOSOLENIA, PROBOSCIA AND PSEUDOSOLENIA FROM THAILAND

Atchaneey Chamnansin1,2, Øjvind Moestrup1 & Nina Lundholm2

1Section of Marine Biology, Institute of Biology, University of Copenhagen
2Laboratory of Molecular Systematics, Natural History Museum of Denmark, University of Copenhagen

The marine planktonic diatom genera Rhizosolenia, Proboscia, and Pseudosolenia were studied with respect to morphology and phylogeny. The samples came from seven locations in marine coastal waters of Thailand in the four provinces, Rayong, Chonburi, Chumphon and Phuket. The samples were collected in the period October 2008 to January 2011. Fifty strains were established in culture and used for morphological and phylogenetic analyses, and complemented with morphological studies of field material. The morphological studies were done using light microscopy, scanning and transmission electron microscopy. Ten species and two varieties of Rhizosolenia were identified. The morphological diversity of R. setigera was high and did not agree with preliminary molecular data. Pseudosolenia calcar-avis was also found and the detailed studies indicate this to be a species complex. Proboscia was represented by P. indica and a new P. siamensis species. Culturing and molecular analyses were often difficult or unsuccessful, but in spite of the problems it was successful for several taxa. The results on the diversity within selected the genera will be discussed, based on the results of the phylogenetic and morphological studies.