Abstract
Genus Frustulia was chosen for this work due to the continuity of the previous research of our phycological group.
Using molecular techniques, it was found that a number of morphologically defined species of diatoms is cryptic species complex, which may have limited dispersal.
The aim of this study was to:
1) evaluate the diversity of the genus Frustulia in northern Europe by molecular methods and classify found species in the phylogenetic context of related species;
2) find out if it possible to identify the isolated species in natural samples by using morphological characters.
There have been analyzed 234 strains by molecular methods. Isolated ones were in four clades. 86 % of the strains belonged to a generic complex F. crassinervia-saxonica. Two strains were identified as species F. gaertnerae and F. septentrionalis. The last line was not described yet so it was labeled as F. sp. This line is closely related to the species F. maoriana, which is considered to be endemic in New Zealand. Phylogeny of the genus was created based on a dataset of four molecular markers. Published morphometric data were then compared with 264 cells photos taken by scanning electron microscope.
There was done surveillance comparison of the results of the analysis of quantitative and qualitative characters with morphological data listed in the available publications. It showed that morphological characters of siliceous frustules are in case of the genus Frustulia hardly applicable to a definite generic classification