This thesis deals with molecular diversity and shape variation of the traditionally delimited unicellular coccoid genera Coccomyxa SCHMIDLE and Pseudococcomyxa KORŠIKOV (Trebouxiophyceae, Viridiplantae). The complex of these traditional genera was found monophyletic position within the class Trebouxiophyceae on the basis of 18S rDNA sequences. Subdivision of this lineage into individual clades was based on 18S rDNA, ITS1 and ITS2 sequences. The results did not confirm delimitation of traditional genera. However, they suggest ecological differentiation of individual clades. The results of phylogenetic analyses were further supported by reconstructions of ITS2 secondary structures and analyses of the compensatory base changes (CBC) among individual clades. The mutual relationships among clades remained, however, partially unclear. Geometric morphometric variation of cell shapes illustrated pattern that was mostly not correlated with molecular data. This indicates high degree of evolutionary plasticity and possible unreliability of these morphological features in taxonomy of the group.