Abstract:

The Caucasus region is characterized by high rate of endemism and taxa richness of fishes. Azerbaijan is a country situated on the border between Europe and Asia with rivers flowing in the Caspian Sea. Natural environment of this country is represented by various habitats with diverse ichthyofauna. This region is very attractive for biogeographical studies because it lays on the border of two different ecoregions. Even on the modern stage of scientific cognition, there is still lack of data about freshwater fishes from that region. Spirlins or rifle-minnows (*Alburnoides* Jeitteles, 1861, Actinopterygii, Cyprinidae) is a genus of small freshwater fishes and it has been chosen as a focus of this thesis because of numerous reports of new species from surrounding countries. The presented thesis is one of the seldom molecular studies trying to reveal the taxonomical situation within the genus *Alburnoides*, describe the phylogenetic relationships between geographically isolated populations, and provide biogeographical implications for fishes in the Caspian Sea river basins. Both mitochondrial (cytochrome b, cytochrome oxidase subunit I) and nuclear (RAG1, rhodopsin) markers were used in the study and the Maximum Likelihood, Maximum Parsimony and Bayesian phylogenetic analyses were performed. Further, the method of Molecular Clock was applied to estimate divergence between linages inside genus *Alburnoides* and for subsequent constructing of biogeographical scenario. High level of genetic variability has been found within the genus *Alburnoides* in Azerbaijan. Examined individuals represent three well-supported major clades in phylogenetic trees, some of them (but not all) corresponding to the geographically isolated localities. The population structure and haplotype distribution within the *Alburnoides* genus cannot be explained only by geographical isolation. There is a putatively undescribed species, *Alburnoides sp. 5* in Ciscaucasian region, a lineage which probably diverged as a result of a vicariant event. Identified lineage richness within the samples from the Talysh Mountains hydrological network probably show the evidence for the existence of glacial refugium in the region. The regions in the North (Greater Caucasus hydrological network) were genetically uniform, while the localities in the South (Talysh Mountains hydrological network) were composed of two different lineages. This brings an evidence for putative colonization events from the North to the South, which might have been facilitated by the known currents in the Caspian Sea. Newly reported invasive species for the Azerbaijan ichtyofauna, *Hemiculter leucisculus*, has been registered.

Keywords: *Alburnoides*, biogeography, fish, genetic variability, phylogeny.