

Anti-Atlas is one of the best exposed places in the world where the rocks and fossils of the Palaeozoic occurs. In this area, the individual sedimentary layers containing numerous fossils. Uncovered the Upper Devonian rocks (about 385-359 million years old) in the Anti-Atlas have hidden the richness of the marine ecosystem since hundreds millions years, that was recorded during one of the greatest faunal crises in history of Earth – the Late Devonian mass extinction. The subject of the proposed project is a detailed description of the dynamics of palaeoenvironment changes in the Upper Devonian carbonate rocks on pelagic Tafilalt Platform exposing in Jebel Bou Ifarherioun. Palaeoenvironment changes which occurred during the Late Devonian period in this area will be carried out on base of palaeontological, sedimentological and geochemical analyses.

Why did we decide on studies of the rocks from this area? First of all - exposed profile shows surface of the sea floor, that has been controlled by the synsedimentary tectonics, is extremely diverse. It has been observed that different groups of benthos organisms are present at tops and in valleys of folds. The results of the analyzes will help to explain what was the reason of differences and to define the relationship between organisms. Secondly, detailed investigations of rocks and fossils (including their ages and skeleton build or structures) will allow to reconstruct the environmental conditions in Jebel Bou Ifarherioun. The results of the analyzes will indicate what was the depth of the basin, what were conditions of deposition, i.e. sedimentation and to estimate of the sea level changes. Thirdly, the proposed idea of research is the first project which subject will accurately reconstructs environmental conditions. Additionally, during field trip in 2017, a new fragment of profile was exposed, which had not been described in literature yet.

The results of palaeontological, sedimentological (microfacial) and geochemical investigations based on the rocks collected from the profile and detailed stratigraphy analysis will widen knowledge about one of the biggest fauna crises of the Earth's history that was on Frasnian-Famennian boundary.