

Corals inhabiting deep environments are common and important components of the benthic fauna in the Devonian. During this time Palaeozoic corals reached the greatest taxonomic diversity. Corals represents sessile benthos, which is very sensitive to environmental changes and provide a number of information concerning environmental conditions prevailing in the past oceans and seas. Analyzing their abundance and diversity, we can track the changes in water salinity, sedimentation rate or even productivity. By examination of the relationship between particular taxa we have opportunity for insight into the competition for space and domination in the community. The proposed research is to provide a comprehensive analysis in the evolutionary and paleoecological context of coral groups (Rugosa, Tabulata and Heterocorallia) inhabiting deep-water (mesozoic and aphotic zones) environments, which developed the Devonian basins and platforms of the Tafilalt and Mader areas of Eastern Anti-Atlas in Morocco. This area in the Devonian was the part of northern shelf of the Gondwana continent, where almost continuously were deposited deep-water sediments. The research area proposed in the project, due to the excellent exposure of the Devonian outcrops, and rich, taxonomically diverse fauna of deep-water corals, offers a unique opportunity to trace the evolution of this group of animals in deeper and stable environments of one coherent marine basins. A detailed analysis of changing richness and diversity of deep-water coral assemblages throughout the Devonian ((from the Lochkovian to the Famennian) within this same sedimentary basin will enable us to look at the influence of local and global factors on the character of their evolution. This is especially important in the context of the Late Devonian mass extinction. The comparative analyses with other known Devonian coral assemblages will enable placing the investigated taxa from Morocco in a specific palaeoecological and evolutionary context. During studies we would also like to make observations concerning interactions (*syn vivo* – during life and *post mortem* – after death) with other (especially encrusting) invertebrate fauna, which will enable assessing symbiotic relations (parasitism and/or commensalism) among deep-water taxa, as well as their diversity and coevolution in particular coral assemblages.