

LITHOLOGY OF RECENT HEMIPELAGIC SEDIMENTS AND QUATERNARY DEPOSITIONAL ENVIRONMENT OF THE ALBORAN SEA

A.M. Samoilov, A.Yu. Sadekov

UNESCO-MSU Research and Training Centre for Marine Geology and Geophysics, Faculty of Geology, Moscow State University, Vorobjevy Gory, Moscow 119899 Russia, fu@geol.msu.ru

During the Leg 4 of TTR-12 Cruise peculiarities of recent hemipelagic sedimentation in the Alboran Sea were investigated. Four cores were collected along a bottom sampling profile from western to eastern part of the basin. Between them two cores mostly consisted of marly sediments were chosen for investigation in laboratories of the Moscow State University: TTR12-290G from Western Alboran Basin and TTR12-293G from Eastern Alboran Basin.

The aim of the work was to study composition, grain size and planktonic foraminiferal assemblages of Quaternary hemipelagic sediments of the Alboran Sea and to discuss on recent depositional environment and climatic fluctuation in the region. The methods applied were detailed description of the cores, thin section analysis, X-ray mineralogical study, measurement of magnetic susceptibility, grain size analysis, study of planktonic foraminiferal assemblages.

During studies a presence of rock fragments in some intervals thickness - up to 0.5 cm of core TTR12-290G was determined. That fact implies a significant terrigenous input into the Western Alboran Basin and suggests that redeposition plays an essential role in sedimentation there.

Granulometric analysis along the core TTR12-293G allowed to distinguish four intervals with different grains size composition. Intervals of predominant clay-grade sediments (I and III intervals) alternate with ones (II and IV intervals), where silt-grade sediments prevail. These variations are also reflected in magnetic susceptibility curve. The intervals of mostly clay-grade sediments are characterized by high content of ferromagnetic minerals whereas others show low susceptibility.

XRD study of clay-grade of the sediments showed no variation in its composition along the core. It is mainly represented by kaolinite (~32%), illite (35%), calcite (20%), chlorite (10%) and quartz (3%).

Two main types of planktonic foraminiferal assemblages can be distinguished according results of study of distribution of species in the core: Atlantic type (presented by dominant species *Globorotalia inflata* and *Globigerina bulloides*) and Mediterranean. Mediterranean assemblages can be subdivided into two variations: cold water masses assemblages (presented by dominant specie *Neogloboquadrina pachyderma* and subdominant species *Globigerina bulloides* and *Globigerinoides ruber*) and warm water masses assemblages (presented by dominant species - *Globigerinoides ruber* and subdominant species - *Globigerina bulloides* and *Neogloboquadrina pachyderma*). Micro-paleontological data allowed to interpret intervals with different grain size composition in terms of paleoclimate. I and III intervals are characterized by warm water masses foraminiferal assemblages and increasing of value of terrigenous material transported. II and IV intervals characterized by cold water masses foraminiferal assemblages and decreasing of amount of terrigenous material.

We believe that intervals II and IV have been deposited during the period of high humidity increasing amount of terrigenous material in the sediments. On the contrary, intervals I and III have been deposited during period of high aridity reducing amount of material supplied from continent.