THE MUD BRECCIA CLASTS
FROM THE MEDITERRANEAN RIDGE : THE RESULTS OF
THE STUDY OF SUBSTANTIAL COMPOSITION

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In 1993, during the TTR-3 Cruise of R/V Gelendzhik, some new mud volcanoes were discovered, located on the crest of the Mediterranean Ridge. The mud breccia from the newly discovered volcanoes is composed of subrounded clasts of different lithologies supported by a silty-mud matrix.

The breccia clasts are represented by a large variety of different rocks: limestones, sandstones, siltstones, and mudstones.

Precise description of the main types of the rocks obtained as clasts from the mud breccia was made. The types of rocks were determined on the basis of macrodescription, microdescription (more than three hundreds of thin sections), and the X-ray data. They provide an important information of the composition and genesis of the Lower-Middle Miocene deposits. The obtained lithologic data show that the Lower-Middle Miocene rocks of the Mediterranean Ridge were formed in deep-sea environments, far away from the continental slope. There show a prevalence of biogenic and hemipelagic sedimentations of marls and muds. A terrigenious matter was supplied periodically by gravity flows. Distant sources were the reason why coarse terrigenious material did not reach the depocentres, and only fine sediments were supplied in the study area thanks to deep-sea fans action. Coarser material was supplied rarely and formed accumulative bodies of suprafans consisted of silty and sandy sediments.

Thus, the genetic features of the defined rock types from the clasts from the mud volcanoes indicate deep-sea environments during their accumulation and the presence of distal turbidites in sedimentary sequence of the Mediterranean Ridge. This suggests that the turbidity currents from the African margin were capable to reach the Mediterranean Ridge crest in the Early-Middle Miocene time, and the Mediterranean Ridge was rather deeply submerged.

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