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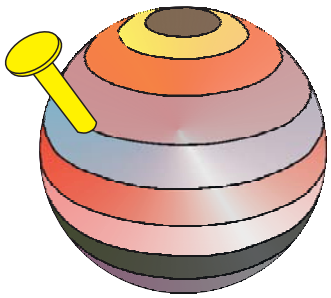

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Abstracts

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New data on the northern Aegean late Miocene marine gateway (Strymon basin, Greece)

KARAKITSIOS, Vasileios[1], CORNEE, Jean-Jacques[2], MOISSETTE, Pierre[3], MANOUTSOGLOU, Emmanouil[4], TRIANTAPHYLLOU, Maria[1], KONTAKIOTIS, George[1], TSOUROU, Theodora[1], AGIADI, Konstantina[1]

[1] National & Kapodistrian University of Athens, Faculty of Geology and Geoenvironment, Department of Hist. Geology - Paleontology, 15784, Athens, Greece, email: vkarak@geol.uoa.gr
[2] UMR 5243 CNRS, Géosciences Montpellier, Université de Montpellier 2, 34095 Montpellier Cedex 05, France
[3] UMR 5276 CNRS, Laboratoire de Géologie de Lyon, Université de Lyon 1, 69622 Villeurbanne Cedex, France
[4] Technical University of Crete, School of Mineral Resources Engineering, GR - 731 00 Chania, Greece

The Strymon basin (northern Greece) is a key region for establishing the Mediterranean-Paratethys connection during the Neogene. It constituted the marine gateway through the Balkans before and after the Messinian salinity crisis (MSC). The Akropotamos locality, in the eastern part of the Strymon basin, exposes Neogene clastic sediments with gypsum intercalations. Four subsections in the Akropotamos area are presented here. The base of the composite section consists of the pre-evaporitic sequence, several hundred meters of predominantly coarse fluviatile conglomerates. The uppermost part is marked by marine intercalations, which pass to clearly open marine facies at the top. The evaporitic unit begins with four meters massive saccharoidal gypsum followed by: one meter gypsilimestone with fenestrae, microbialite, and clayey carbonates with serpulids; four meters gypsirudite to gypsarenite, limestones with saccharoidal gypsum nodules, and laminated limestone with resedimented gypsum beds; two meters laminites and sandy limestones with serpulids and bivalves, as well as rare gypsum lenses; five meters laminites, silty clay with ripple marks, and silt to limestone beds with hummocky cross-stratification and decimeter intercalation of laminated, cherty sandstone before the last meter of the succession (bivalves, serpulids, plants, and coal are observed in this term of the sequence in one of the area's subsection); 1.5 meters dark clays; 1.5 meters massive to porous fine-grained limestone; two meters laminated marls with 0.5 meters ferruginous limestone at their base. The lower half of the above sequence is rich in ostracods indicating an estuarine environment. Changes in the faunal composition reflect mainly salinity fluctuations (mesohaline to hypersaline). In the upper part of the evaporitic unit, abundant nannofossil are identified, namely *Helicosphaera* spp., *Syracosphaera* spp., *Coronosphaera* spp., and *Lithostromation perdurum*. The contemporaneous presence of *D. bergrenii, A. primus, H. sellii* supports the biostratigraphic assignment of the studied samples within NN11 biozone, in particular NN11b, pointing to a Messinian age. The evaporitic unit is capped by three meters travertinous limestones. Indications of the Messinian erosional surface, separating this sequence from the overlying clastic sediments probably correspond to a Gilbert-type fan delta.

The Akropotamos deposits are correlated with those in the offshore Prinos-Kavala basin. The Prinos-Kavala basin was tectonically formed during the upper Paleogene by NE-SW and NW-SE faults. Borehole and seismic profile data from the Kavala-Prinos oil field show that the basin's sequence comprises a thick clastic pre-evaporitic sequence, deposited above the metamorphic basement of the Rhodope massif. This is followed by an evaporitic unit, 700 to 1000 m thick, deposited during the late Miocene (Messinian) and consisting of seven to eight anhydrite-marl cycles. Toward the depocenter of the basin, the anhydrite is replaced by halite layers, usually a few meters thick. The sequence is completed by post-evaporitic deposits (average thickness 1800 m) consisting of sands, silts, and clays (Pliocene-present). Thus, the Prinos-Kavala sequence corresponds to the S-SE offshore prolongation of the Strymon basin sequence. The northern Aegean Sea, during the MSC 1st stage, was a peripheral shallow-water basin. In the Pliocene-Pleistocene it subsided rapidly, filled mainly by Gilbert-delta fan turbidites onlapping the underlying evaporitic unit of the Prinos-Kavala basin. The onlapping sediments originated from the same northern continental source area that fed the Strymon basin.

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