

TO THE CHARACTERISCTIC OF THE MESSINIAN IN THE EAST  
MEDITERRANEAN

Ivan S. Schumakov

(Laboratory of Marine Geology of Moscow State University)

Several geological objects studied by author in the East Mediterranean are of a definite interest for the characteristic of Messinian in this area. Among them mention should be made of little known sections of the Messinian stage established in the Nahr-El-Kabir river basin near the town Al-Lathegieh in Syria. Occurring conformably on Tortonian deposits, the Messinian is represented from the bottom upwards by: 1) compact limestones, coquina detritus of bioherm (serpulid) limestones, interconnected by mutual transitions; 2) crystalline and laminated finegrained gypsum with bands of stromatolite limestones, marls, detritic limestones. The sequence is crowned by stromatolites forming locally at the places of a washout a characteristic "pavement" of large semispheres - to 1.5-2 m in diameter. The total thickness of the Messinian does not exceed 40-50 m. Usually, with traces of an interval the Messinian is overlain by Lower Pliocene gray clays (transgressive series of deep bays and estuaries). The complex of foraminifers of Messinian age includes: Globigerina bulloides d'Orb., G. pachyderma (Ehrenb.), G. apertura Cushman, Globigerinella siphonifera (d'Orb.), Globigerinoides sp., Globorotalia apertura Pezzani, Porosonion subgranosus (Egger), Elphidium macellum (F. et M.), E. aculeatum (D'Orb.), Asterigerina plaorbis d'Orb., Streblus beccarii (Linne), Quinqueloculina consorbina (d'Orb.) Bolovina d'latata Reuss, Bulimina echinata d'Orb. (determinations by V. A. Krasheninnikov).

The Messinian of Al-Lathegieh region became formed, apparently, in a shallow lagoon separated from the main basin by a sill of Cretaceous and Paleogene rocks; their lithological features as well as the faunistic complex warrant an assumption of this lagoon having been filled by waters of a normal

salinity at the time when a connection has been reestablished between the Messinian lake-sea and the ocean and during the repeated evaporations of the lagoon water during the periods of a general drop in the level of the lake-sea, when this connection became interrupted and the main basin subjected to desiccation.

The valley of Nahr-El-Aasi (Oront) river beginning in Syria and flowing into the Mediterranean in Turkey, represented during the Messinian a deep canyon formed on Miocene grabens. Owing to an "instantaneous" Pliocene ingression it became a deep estuary and got filled by a thick (500-600 m) mass of clays containing numerous fauna remains of a Plaisancian outlook.

New drilling data in the Nile valley confirm its great depth during the Messinian indicating the extent to which the water level fell in the Messinian lake-sea at the periods of greatest desiccation - not less than 1.5-2 km - suggesting the existence in the Upper Tortonian of a deep depression in the place of the Levantian sea.

The presence of Messinian evaporites on Crete and Cyprus data of deep drilling as well as extensive material supplied by continuous seismic profiling make it possible to regard the entire eastern basin of the Mediterranean as an area of an extensive distribution here of Messinian deposits formed at greatly varying hypsometric levels (from nearly 0 to minus 2-3 km) and complicated by active post-Messinian vertical movements of different signs.