

# Bathymetry and magnetic anomalies of the Eastern Mediterranean

by

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## Abstract

A geophysical survey has been made of the Levantine Sea east of Crete during 1972 - 1974. The survey extends and completes the work of MORELLI who has surveyed the rest of the E. Mediterranean. The bathymetric chart is based primarily on precision soundings (wide beam) taken by RRS *Shackleton* — RRS *Discovery*, both ships navigating by satellite fixes. The second source are the many soundings collected by the British Admiralty for submission to the IHB. The new chart is closely similar to NO 310 (Defence Mapping Agency Hydrographic Centre, Washington D.C., 1972). Differences in detail are that the new chart does not show the NW-SE trending features on the Nile Cone and that the continuity of the Pliny-Strabo trenches has been slightly improved by 28 additional crossing tracks. Dylines prints of this chart will shortly be available.

The magnetic map is not yet complete but is a preliminary contouring of the results from RRS *Shackleton* 1972. Most of the anomalies within the surveyed area are east of the latitude of the Gulf of Antalya (lat.  $30 \frac{1}{2}^{\circ}$  E). As presently contoured they show noticeable NE - SW elongation, parallel to the fold direction in Israel and to the trend of Eratosthenes Seamount. The anomalies do not look like seafloor spreading anomalies but, rather, resemble anomalies visible on the aeromagnetic map of France or on marine surveys of the English Channel. They are thus not inconsistent with a continental crust beneath the Levantine Sea.

The available evidence suggests that there is a Benioff Zone under the Southern Aegean and that oceanic crust has been subducted along the Hellenic arc throughout the past 10 my. It also suggests that there is no oceanic crust south of the Hellenic Trench at the present. This is a Paradox : it is hard to accept that we are at a unique moment in time.

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## Discussion

**Closs :** Have you magnetic anomalies corresponding to diapirs?

**Matthews :** No.

**Montadert :** Pensez-vous qu'un vieux plancher océanique puisse être masqué par les sédiments?

**Réponse :** How deep you have to depress the oceanic floor to smooth the magnetic anomalies? You have to think of an important deep 15 km for example.

**Montadert :** Have you an interpretation of negative anomaly along the Syrian coast?

**Réponse :** Not at present time.

*Rapp. Comm. int. Mer Médit.*, 23, 4a, p. 223 (1975).

