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Abstract

The cruise no. 40 of the German R/V METEOR was designated to the Mediterranean Sea. The cruise was subdivided into four legs. Leg M 40/1 dealt with the Mediterranean Ridge accretionary complex and its forelands (morphology, subbottom structures and sediments). The transit from Hamburg to the Mediterranean was used for gravimetric and magnetic measurements. Leg M 40/2 was designated to studies of hydrothermalism, geochemical budget and flux modelling in the Aegean Sea (islands of Milos, Santorini and Kos). Leg M 40/3 dealt with the description of the variability of the structure and function of deep sea bottom and pelagic communities in the Aegean Sea and neighbouring areas. The main objectives of leg M 40/4 were to investigate paleoceanography, paleoclimatology, volcanic scenarios, microbial activities and heavy metals in anoxic sediments. Emphasis was laid on the sampling of sapropels and ash layers, and anoxic sediments from the Urania Basin.

The present report contains a summary of the research objectives, cruise narratives and preliminary results. Lists of data of the working areas and the stations are presented as a supplement. The cruise was funded by the Deutsche Forschungsgemeinschaft.

Zusammenfassung

Die Reise Nr. 40 des deutschen Forschungsschiffes METEOR führte in das Mittelmeer. Die Fahrt war in vier Abschnitte gegliedert. Der Abschnitt M 40/1 beschäftigte sich mit dem Akkretionskomplex des Mittelmeeran Rücken und seinen Vorländern (Morphologie, Untergrundstrukturen und Sedimente). Die Anreise von Hamburg ins Mittelmeer wurde zu gravimetrischen und magnetischen Messungen genutzt. Der Abschnitt M 40/2 war Untersuchungen des Hydrothermalismus, des geochemischen Haushalts und dem Modellieren von Stoffflüssen in der Ägäis (Inseln Milos, Santorin und Kos) gewidmet. Der Abschnitt M 40/3 galt der Beschreibung der Variabilität von Struktur und Funktion von benthischen und planktonischen Lebensgemeinschaften in der Tiefsee der Ägäis und angrenzender Gebiete. Der Abschnitt M 40/4 umfasste Arbeiten zu Paläoozeanographie, Paläoklimatologie, Vulkanismus, mikrobiellen Aktivitäten und zu Schwermetallen in anoxischen Sedimenten. Im Mittelpunkt der Untersuchungen standen Beprobungen von Sapropel- und Aschenlagen und das Urania-Becken mit seiner speziellen Genese.

Der vorliegende Bericht enthält eine Zusammenfassung der Forschungsziele, Berichte über den Fahrtverlauf und erste Forschungsergebnisse. Im Anhang sind Tabellen zu den Arbeitsgebieten und Stationen präsentiert. Die Reise wurde von der Deutschen Forschungsgemeinschaft gefördert.