STRONG VARIABILITY OF BATHYPELAGIC ZOOPLANKTON AT A SITE IN THE LEVANTINE SEA - A SIGNAL OF SEASONALITY IN A LOW-LATITUDE DEEP-SEA?

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In January 1987 and June 1993, directly comparable data sets of zooplankton were obtained from stratified oblique tows with a 1 m^2 Mocness above a 4250 m deep trough SE of Crete (34°20'N, 26°00'E). The device equipped with nine black nets of 0.333 mm mesh size was towed at a speed of about 2 knots, commencing about 100 m from the seabed. Zooplankton was defined arbitrarily to be smaller than 5 mm.

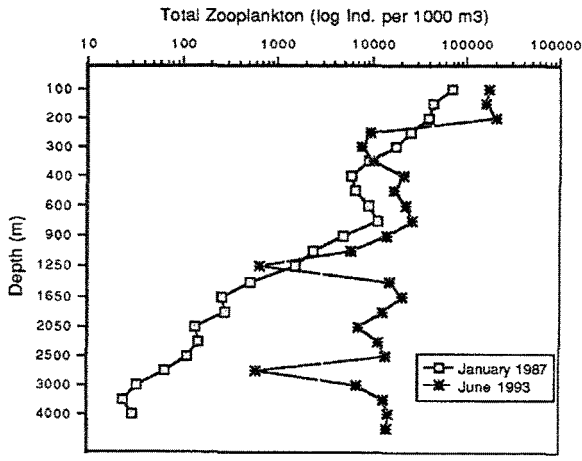
The standing crop of zooplankton was significantly higher in June (summer) than in January (winter) 1987 (Table). As examplified by one profile, the respective increase had occurred throughout the water column, but it was especially high below 1050 m, i.e. in the bathypelagic zone, as compared to shallower layers. This disproportional increase was coupled with rather constant concentrations at depth. This sort of profile contrasts to the well-known bathymetrical decrease of zooplankton at intermediate and low latitudes that was also observed at the Levantine site in January 1987 (Figure).

Overall, copepods contributed 90% to the zooplankton at both seasons. In June 1993 two calanoid species, *Calanus helgolandicus* and *Eucalanus monachus*, comprised almost 54 and 49% of the standing crops of copepods and total zooplankton, respectively (Table). Their highest absolute and relative concentrations were encountered below 600 m, and as deep as 4000 m. In this range, both species accounted for some 70% of the total zooplankton. In January 1987, *C. helgolandicus* was completely absent, and *E. monachus* constituted only 20% of the copepods and the total zooplankton each. At that time, *E. monachus* abounded between 450 and 900 m (WEIKERT and KOPPELMANN, 1993). By its abundance, this species seems to be a significant constituent of the Levantine deep-sea copepod assemblage (see also PANCUCCI-PAPADOPOULOU *et al.*, 1988) as compared to the Western Mediterranean (SCOTTO DI CARLO *et al.*, 1984).

The significant differences in the abundance and composition of zooplankton document for the first time the existence of a strong variability in a bathypelagic community at a subtropical latitude. The studied site lies in a region which is affected by a long-living anticyclonic gyre; hence at the present state of investigation, it is not clear, whether or not the observed variability is on a seasonal scale.

Standing crops of zooplankton (Individuals/m^2) at the deep site off Crete. In parentheses: relative abundances

Group/Taxon	January 1987	June 1993
Eucalanus monachus	3722 (20.0)	25706 (30.5)
Calanus helgolandicus	absent	15287 (18.0)
Total copepods	16965 (90.0)	76163 (90.5)
Total zooplankton	18865	84149



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