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Biological Investigations on Zooplankton Composition in three Lagoons from Western Greece

E. PAPATHANASSIOU and M.-A. PANCUCCI-PAPADOPOULOU

National Centre for Marine Research, Agios Kosmas, Hellinikon, Athens (Greece)

Several publications exist on the composition and spatial distribution of the zooplankton in the lagoons and closed bays in the Mediterranean Sea (Comaschi Scaramuzza & Martino, 1981; Specchi & Fonda Umani, 1981; Ferrari et al, 1982; 1985; Siokou Frangou, 1986). However most of these studies have been conducted using a particular sampling method and a special design net without previously performing test to assess the efficiency of the sampling gear. On the other hand, the differences on the sampling equipments that have been used contribute to the lack of information and confusion since the obtained results are rarely comparable.

Zooplankton was collected from three lagoons (Logarou, Tsoukalio and Rhodia) in the area of Amvrakikos Gulf (Western Greece). Four different nets were used (two conical with 132 and 200µm mesh size gauze and two rectangular with 63 and 132µm gauze) for a period of 6 months during 1987 at 4 stations in these lagoons. On the total 94 samples were collected. The abovementioned gear was chosen in order to give a global picture of the zooplankton composition and biomass values in these different sites using the described nets. In addition, an approach was made to clarify problems related to zooplankton sampling in very shallow waters and provide the tool to facilitate any decision to choose the appropriate sampling gear in these habitats.

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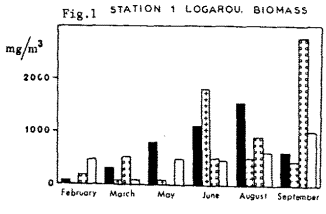

Fig.1 STATION 1 LOGAROU. BIOMASS

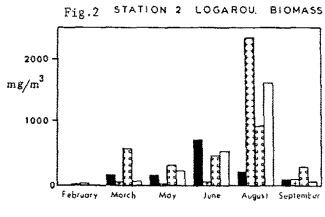

Fig.2 STATION 2 LOGAROU. BIOMASS

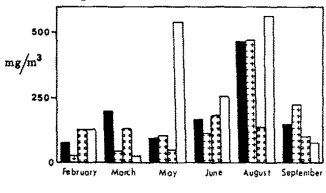

Fig.3 TSOUKALIO. BIOMASS

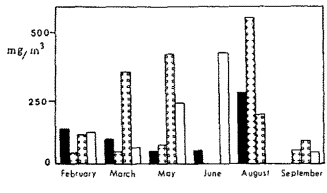

Fig.4 RHODIA. BIOMASS

BIOMASS VALUES USING THE FOUR MESH-SIZE NETS.

c132 : 132µm conical net; r132 : 132µm rectangular net;
c200 : 200µm conical net; r63 : 63µm rectangular net.

Biomass values were relatively higher in Logarou than in the other lagoons for the whole sampling period with values sometimes exceeding an order of magnitude (Figs 1, 2, 3, 4). Densities of organisms in the samples expressed as number per m^3 were fluctuating between months, having generally, a good relation with the biomass values. Some major differences in the total density between samples and between stations during the sampling period were observed, showing that the most productive lagoon was the largest lagoon (Logarou). The number of zooplankton groups and their abundance varied in relation to the net type. Important differences exist between samples collected with different mesh-size nets. High abundance of copepods was generally observed in samples collected with the 200 µm net, while copepod nauplii and bivalve larvae were abundant in samples collected with the 63 µm net. Not statistical differences were observed when different type nets with the same mesh-size were applied for sampling (conical and rectangular 132µm). The use of only one net type is not the appropriate method for sampling in the lagoons and in order to give a representative estimation of zooplankton abundance, several mesh size nets should be used.

References

Comeschi Scaramuzza, A. & E. Martino, 1978. Archo Oceanogr. Limnol. 19 :99-120.
Ferrari, I., V.U. Ceccherelli, M.G. Mazzocchi & M.T. Cantarelli, 1982. Neth. J. Sea Res. 16: 333-344.
Ferrari, I., M.T. Cantarelli, M.G. Mazzocchi & L. Tosi, 1985. J. Plank. Res. 7 : 849-865.
Siokou Frangou, I., 1986. Thalassographica. 9 : 29-38.
Specchi, M. & S. Fonda Umani, 1981. Rapp. Comm. int. mer Medit. 27 : 101-103.