

# GEOGRAPHICAL AND BATHYMETRICAL DISTRIBUTION OF *ARISTAEOMORPHA FOLIACEA* AND *ARISTEUS ANTENNATUS* (DECAPODA, ARISTEIDAE) IN THE GREEK IONIAN SEA

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## Abstract

*Aristaeomorpha foliacea* and *Aristeus antennatus* have been found for first time in the Eastern Mediterranean (Greek North Ionian Sea). A total of 18,227 specimens of *A. foliacea* and 1807 individuals of *A. antennatus* were collected during three experimental trawl surveys mainly in the depth range 500-900 m. The spatio-temporal distribution of both species in the study area is discussed.

**Keywords :** distribution, Decapoda, Deep water, Ionian Sea

## Introduction

*Aristaeomorpha foliacea* and *Aristeus antennatus* are commercially very important decapods in the Western and Central Mediterranean. However, they are almost unknown in the Eastern Mediterranean and only scarce data exist on their distribution [1, 2, 3] and biology [3] in the Greek waters. The present work aims to study the geographical and bathymetrical distribution of the two species in the Greek waters of the North Ionian Sea.

## Material and methods

Three seasonal surveys (April, July and September 2000) were carried out along the Greek coasts of the North Ionian Sea, between Othoni Island and the Island of Zakynthos, (Fig. 1a, b) in depths ranging from 300 to 1200 m. Stratified sampling was used and a total of 60 hauls were carried out during each survey. A commercial 159 tons vessel, with 923 Hp engine was hired, equipped with a trawl of 40 mm stretched mesh size in the cod-end. 13426 and 1476 specimens of *A. foliacea* and *A. antennatus*, respectively, were sexed, measured (CL, mm) and weighted (gr).

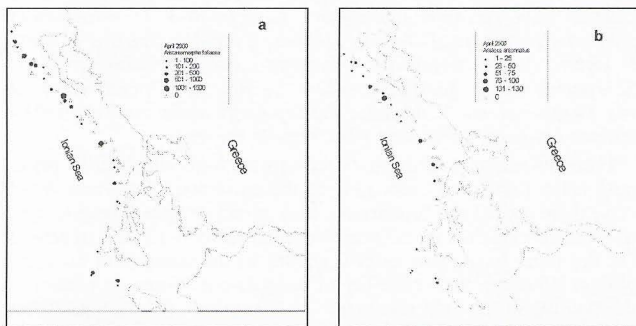


Fig. 1. Abundance (N/h) of *A. foliacea* (a) and *A. antennatus* (b) in April 2000 per sampling station in the study area

## Results and discussion

*Aristaeomorpha foliacea* was found for first time in important quantities in all the experimental surveys (289-259 N/h). *A. antennatus* was also caught for first time in the study area but in lower numbers (50-25 N/h). The presence of both species showed a spatial continuity in all the study area, however, their abundance picked in some of the sampling stations (Fig. 1a, b). This significantly lower abundance of *A. antennatus* comparing to *A. foliacea* has been found also in the Sicilian Channel [4], while in the Italian Ionian Sea the opposite has been observed, attributed to different oceanographic and ecological factors [5].

*A. foliacea* and *A. antennatus* were found in depths ranging from 487 to 1047 m. and from 504 to 1171 m, respectively. *A. foliacea* was more abundant in the depth zone 500-700 m, whereas the abundance of *A. antennatus* did not differ significantly in the zones 500-700 and 700-900 m (Kruskal-Wallis test,  $P=0.38$ ). Both species presented very low values in depths >900 m (Fig. 2a, b). Small specimens (<30 mm CL) of *A. foliacea* appeared almost exclusively in the depth zone 500-700 m., although some of them were also found in depths <500 m. (Fig. 2a). Larger individuals (>30 mm CL) appeared in both depth zones, however, they were very abundant between 500-700 m. *A. antennatus* specimens were found in three depth zones (500-700, 700-900, >900 m) but in very low numbers in depths >900 m (Fig. 2b). Large individuals (>45 mm CL) were more frequent from 500 to 700 m.

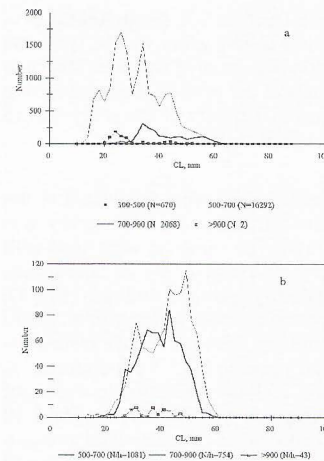


Fig. 2. Length frequency distribution of *A. foliacea* (a) and *A. antennatus* (b) in relation to depth

April to the deeper one in July and the opposite from July to September. This is not in fully agreement with the distribution pattern of the species in the W. Mediterranean. In this area the species is found in deeper waters in winter-spring whereas in the shallower in autumn [7].

Red shrimp species were found in important quantities in the Greek Ionian Sea, fact hopeful for the development of deep-water fishery in Greece. A more detailed investigation on the biology of the two red shrimps in relation to environmental factors would improve our knowledge on their distribution pattern in the study area.

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