 STRUCTURAL ASPECTS OF ANEMONIA VIRIDIS (FORSKAL, 1775) (CNI DARIO, ANTHOZOA) POPULATIONS IN THE NORTH AEGEAN SEA
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Abstract
This paper is concerned with the structural aspects of the Anemonia viridis populations found in the North Aegean Sea. It was found that the mean wet weight of anemone individuals and the density of the populations increases with depth and distance from the shore. The differences in the structure exhibited by Anemonia viridis populations, were attributed both to the specific hydrodynamic characteristics of the biotope and to several biotic interactions.

Key-words: Infralittoral, Population dynamics, Aegean sea, Cnidaria, Zoobenthos

Introduction
For a long time Anemonia viridis has been regarded as one of the most common representatives of the sea anemone populations of the Mediterranean and NE European shores (1,2,3,4). Chintiroglou & Koukouras (5) have described the seasonal structural (size classes) variations of the populations, while Schlichter (6), Janssen & Möller (7) and Chintiroglou & Koukouras Chintiroglou et al. (8) have reported on its feeding habits. The aim goal of the present study-work is to determine whether there is any structural (size classes) variation in the population which may be related to vertical distribution.

Material and methods
Sampling was carried out in Nea Plagia in Chalkidiki peninsula, along a straight, gently shelving transect line (off shore -150 m) on a shore fully exposed to Southern winds. Three distinct biotopes (zones A, B and C) were observed and described by Chintiroglou et al. (8).

Results
The size classes frequency distribution of wet weight of A. viridis exhibited a normal distribution in zones A (X=0.13, p=0.029) and B (X=0.09, p=0.033). However, in zone C the size classes were not normally distributed (X=0.09, p=0.18), although their distribution was very close to a normal one (68.27% of individuals followed normal distribution; see Fig 1a-c). Differences also existed between mean wet biomass from zone to zone (F=6.131, df=4, p=0.001). Individual mean biomass was at its lowest in zone A and in its highest in zone C. Differences existed between all populations (A-B, A-C and B-C; Fisher LSD values, 0.096, 0.144 and 0.133 respectively).

Discussion
Since several years it is well known that larger A. viridis specimens are more commonly found than smaller ones with increasing depth (2.3). The present study provides for the first time clear statistical results to support this point. Similar observations have been made by Goss (10) for the genus Metridium senile, and for Anthopleura elegantissima and A. santohymannica by various authors (11, 12, 13, 14, 15). Besides this more or less general remark about the distribution of A. viridis, nothing is known precisely about its bathymetric distribution and its size classes range. Some information on the seasonal variations of the structure of the A. viridis populations was given by Chintiroglou et al. (5), who found significant differences in both populations density and mean wet biomass of the individuals.

The limited participation of the large size classes in shallow waters could be a result of increased hydrodynamism in zone A and B, as their biotope is frequently exposed to strong winds from various directions (S, SW, N, and NW), whose frequency (year round) ranges from 20 to 34% (16). This observation is further indicated by the positive correlation of biomass with both depth and distance from shore. This observation is also supported by the fact that, while the population density in the two zones (B and C) did not differ significantly, mean wet biomass in the two zones was significantly different. This difference could be attributed to a number of biotic factors, such as intraspecific competition between smaller and larger members of the colony, predation, feeding abilities and changes in migratory behaviour by larger individuals. Examples of such behaviour are given for Anthopleura elegantissima (11, 12) and for A. santohymannica (13, 14, 15). Recently, Williams (17) noted two separate forms of behaviour in response to mutual tentacular contact between individuals of the sea anemone A. viridis: acrorhagial aggression and pedal disk detachment. During previous laboratory and field observations by our team, it has been noted that when two individuals of Anemonia viridis are compe-