DISTRIBUTION, GROWTH AND MATURITY OF *ELEDONE CIRRHOSA* (CEPHALOPODA : OCTOPODA) IN THE THRACIAN SEA (EASTERN MEDITERRANEAN)

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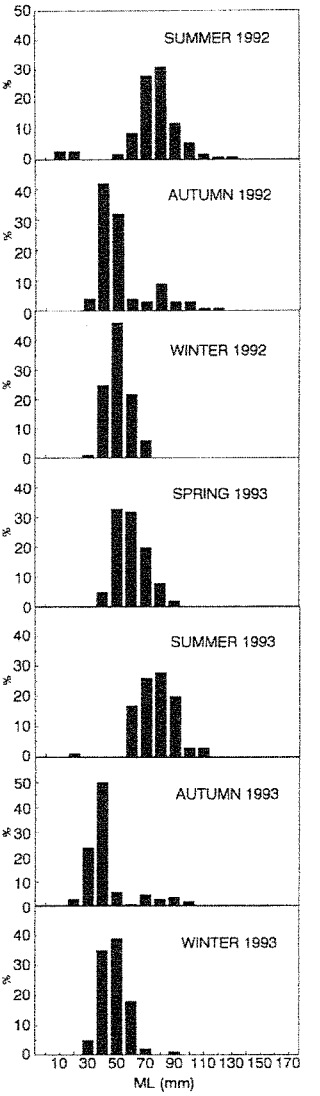
The horned octopus *Eledone cirrhosa* (Lamarck, 1798) is a benthic species quite common throughout the Mediterranean Sea, as also in the coasts of N.E. Atlantic and the North Sea. The population of *Eledone cirrhosa* was sampled over a total of 5862 km, between 22-416 m of depth. Seven seasonal trawl surveys were carried out the summer (June), autumn (September) and winter (late Novemmber - early December) in 1992 and 1993, and in spring (March) 1992. The area under investigation was subdivided into 4 depth strata: 0-50 m, 50-100 m, 100-200 m, >200 m; the hauls were proportionally distributed in the respective areas and positioned randomly.

Eledone cirrhosa was captured between 44-315 m and more frequently between 50-200 m. In autumn recruits (ML: 20-60 mm) are most abundant betwween 50-100 m, whilst larger individuals were caught mainly beyond 100 m. Size distribution ranged between 20-155 mm for females and 15-111 mm for males. The seasonal length frequency distribution (Fig 1), showed the presence of two or more cohorts in the catches of summer and autumn whilst in winter and spring it was possible to single out only one cohort to be followed over a period of two more seasons. The progression in modal size indicated growth rates of 10-20 mm per season, slowing down for bigger individuals. The recruits (ML: 20-60 mm) were already present in summer, but represented a higher proportion of the catch in the autumn sample. The low presence of larger animals (ML > 70 mm) in autumn, and their disappearence from the catches in winter,probably is due to high post-spawning mortality (MANGOLD- WIRTZ, 1963; BOYLE, 1983; BELCARI et al. 1990). In summer and autumn 1992, a third cohort, consisted of the largest specimen (ML > 100 mm), is doubtful. These individuals are probably slower-growing ones, which did not mature in the second year but overwintered as immature adults and contributed to the spawning population of he third year. Similar observations have been made in the *Eledone cirrhosa* growth model proposed by BOYLE (1983).



Least square regression equations were calculated from the logarithmically transformed mantle length (ML mm) and body weight (W gr) data, for each sex. The constants a and b in the resulting power functions- $W = aML^b$ - are :

females : a = 0.002615, b = 2.506, r = 0.93
males : a = 0.003358, b = 2.432, r = 0.91

The mantle length-weight relationship for females and males were not significantly different.

The VON BERTALANFY growth-parameters, estimated according to the SRLCA method (SHEPERD, 1987a), are :

MLinf = 240 mm, K = 0.34, to = 0.27

According to the above estimates, the largest mantle length observed (ML = 155 mm) corresponds to a three years old individual. However the group of largest individuals (ML > 100 mm), as it seems from the seasonal length frequency distribution, is poorly represented, which means that horned octopus usually matures, spawns and dies before reaching the age of two years (ML : 109 mm), an inference that is in accordance with the available references on the species. The maturity stages of *Eledone cirrhosa* were determined according to LIPINSKY'S scale (1979). The reproduction of *Eledone cirrhosa*, seems to start in early summer and last till mid of autumn,since mature males and females were observed during these seasons. Males were found to reach maturity earlier than females.

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