

# ANNUAL VARIABILITY OF THECOSOME PTEROPOD POPULATION DENSITIES IN THE SOUTH ADRIATIC

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## Abstract

The composition and abundance of thecosome pteropods were investigated by taking weekly samplings at the station near Dubrovnik during 1996. Twelve species were identified. *Desmopterus papilio* was registered for the first time in the Adriatic. The highest density of pteropods (1171 ind./10m<sup>3</sup>) was recorded in mid-August, while the lowest density (1 ind./10m<sup>3</sup>) occurred in mid-January. *Limacina inflata*, *Creseis virgula* and *C. acicula* accounting more than 85% of the overall pteropod counts. Intensive reproduction occurred in the summer-autumn period for all three species.

**Keywords:** Zooplankton, Pteropod, Adriatic Sea.

## Introduction

Existing data on thecosome pteropod in the Adriatic Sea are scarce. The available literature regards mostly species composition and horizontal distribution (1,2). This paper presents the composition and weekly variation in abundance of thecosome pteropods over a one year period in the coastal waters of Dubrovnik.

## Material and methods

The plankton samples were collected at a station located 1/2 Nm southwest of the island Lokrum near Dubrovnik in time intervals of 1-3 weeks during 1996. Samples were taken by vertical hauls at depth of 75-0 m, using a Nansen net with a 200 µm mesh size. The planktonic material was preserved with a 2.5 % formaldehyde solution.

## Results and discussion

At the Lokrum station 12 species of thecosome pteropods were identified. *Limacina inflata*, *L. trochiformis*, *L. bulimoides*, *Styliola subula*, *Creseis virgula*, *C. acicula*, *Hyalocylix striata*, *Clio pyramidata*, *Cavolinia inflexa*, *Peracilis reticulata* i *Cymbulia peroni* have been reported previously (1, 2) while *Desmopterus papilio* has been registered for the first time in the Adriatic. This species is common in tropical areas of the Atlantic and in the Indian Ocean (1). Contrarily, it is rare in the Mediterranean and has been registered only in the western basin (3, 4), which indicates its probable immigration to the Adriatic by way of the Red Sea.

The total number of thecosome pteropods were higher in the latter half of the year (Fig. 1) that coincidence with earlier research (2). A marked increase in numbers (1171 ind./10m<sup>3</sup>) was recorded in mid-August, then decrease rapidly at the beginning of September. *Limacina inflata* made 87% of total thecosome pteropods count (Fig. 2). On the contrary, in the Mediterranean, this species has its lowest density during summer, and its maximum mainly from autumn to spring (1). Except *L. inflata*, the most numerous species were *Creseis virgula* and *C. acicula*. The highest numbers of *C. virgula* (136 ind./10m<sup>3</sup>) were recorded at the end of October, and for *C. acicula* (62 ind./10m<sup>3</sup>) at the end of September (Fig. 3, Fig. 4). In the Mediterranean Sea *C. virgula* is numerous, but the seasonal distribution in density varies in certain areas (1,5). Also, the density and frequency of the *C. acicula* are irregular and coherent ecological rules are difficult to determine (1).

All three species reproduce intensely during the summer-autumn period, according to the distribution of juvenile specimens throughout the year (Fig. 2, Fig. 3, Fig. 4). In the Mediterranean Sea *L. inflata* reproduce intensely from autumn to spring, the *C. virgula* from autumn to winter, and there is no rules for the *C. acicula* (1).

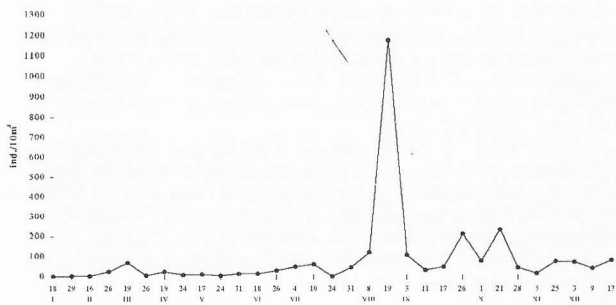


Fig. 1. Abundance of total thecosome pteropods at the station Lokrum during 1996.

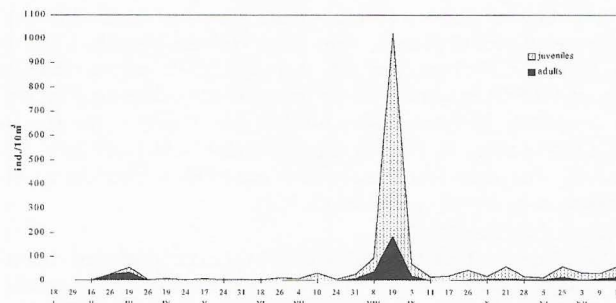


Fig. 2. Abundance of *Limacina inflata* at the station Lokrum during 1996.

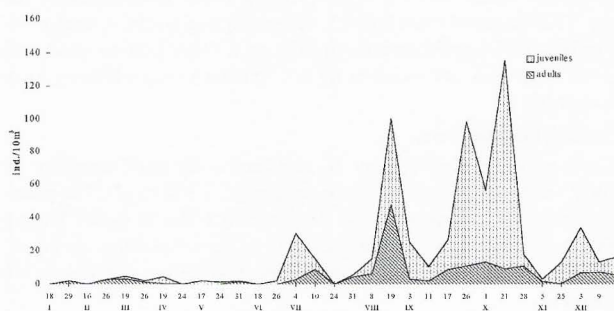


Fig. 3. Abundance of *Creseis virgula* at the station Lokrum during 1996.

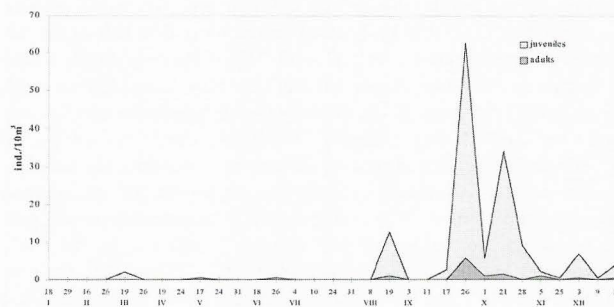


Fig. 4. Abundance of *Creseis acicula* at the station Lokrum during 1996.

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