

PLANKTONIC OSTRACODS OF THE SOUTH ADRIATIC BASIN

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Abstract

Planktonic ostracods of the South Adriatic basin were investigated by the m/b *Bios* at five fixed stations in five seasonal cruises from 20 April 1993 to 22 February 1995. Fifteen species have been registered: *Conchoecia spirostris*, *C. porrecta adriatica*, *C. porrecta*, *C. magna*, *C. curta*, *C. procera*, *Archiconchoecia striata*, and for the first time in the Adriatic, *Conchoecia echinulata*, *C. microprocera*, *C. macroprocera*, *C. elegans*, *C. rotundata*, *C. spinifera*, *C. loricata* and *C. rhynchena*. The greatest number of them is present in winter period, and the highest total value of 8.05 specim./m³ has been registered at the P - 300 station, in the 200 - 100 m layer.

Key-words: Adriatic Sea, zooplankton, vertical migration

Introduction

Planktonic ostracods in the Adriatic sea have not been sufficiently investigated so far. Claus (1) was the first one to note down the existence of planktonic ostracods in the North Adriatic. Not far away from Trieste he discovered the species *Conchoecia spirostris*. In the investigating expedition Rudolf Virchow, Schweiger (2) found four species of ostracods: *C. spirostris*, *C. procera*, *C. curta* and *Archiconchoecia striata*, and he concluded that their number was decreasing from the south to the north. In the Central Adriatic Gamulin (3, 4) registered *Archiconchoecia striata* and *C. spirostris*. Besides these two species Hure (5, 6) found *C. claussi* G.O. Sars (= *C. curta* Lubbock), *C. magna* and *C. procera*. Gooday and Angel (7) described a new subspecies in the North Adriatic - *Conchoecia porrecta adriatica*.

In this work some preliminary data on the qualitative structure, abundance and distribution of planktonic ostracods in the South Adriatic basin are given.

Material and methods

Planktonic samples have been collected during five cruises at five fixed stations in the eastern part of the South Adriatic basin (Fig. 1) by the motor-boat *Bios* in the following periods: 20 - 21 April 1993; 16 - 17 September 1993; 26 - 27 February 1994; 17 - 18 June 1994; 21 - 22 February 1995. The stations are located at the following hydrographic co-ordinates:

P - 100: 42°38.5' N 18°02.0' E; P - 100A: 42°44.0' N 17°15.0' E;
P - 300: 42°27.0' N 17°53.0' E; P - 300A: 42° 32.0' N 17°29.0' E;
P - 1000: 42°44.0' N 17°15.0' E.

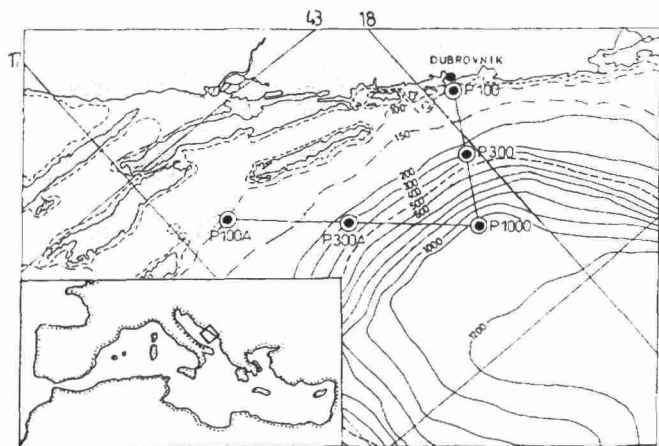


Fig. 1. Location of investigation stations.

For the collecting of samples a Nansen type net (diameter 114 cm, length 380 cm) with the mesh netting of 250 μ m and equipped with a closing mechanism was used. The samples were collected by vertical hauls above the depths of 100, 300 and 1000 m, in the layers of 0 - 50, 50 - 100, 100 - 200, 200 - 300, 300 - 400, 400 - 600, and 600 - 1000 m.

As the samples were collected, several hydrological parameters - temperature, salinity, nutrition salts and dissolved oxygen - were also recorded. A total of 17,380 specimens of planktonic ostracods were isolated in night and daily series. The samples have been examined in the Laboratory of Plankton Ecology, using "Wild" and "Carl Zeiss" microscope. Species densities were expressed as number of specimens/100 m³, except for *Archiconchoecia striata* (specimens/m³).

Results and discussion

In the zooplanktonic sampled during the five cruises of the m/b *Bios*, a total of fifteen species of planktonic ostracods have been identified: *Conchoecia spirostris*, *C. porrecta adriatica*, *C. porrecta*, *C. magna*, *C. curta*, *C. procera* and *Archiconchoecia striata* already registered before, as well as the species: *Conchoecia echinulata*, *C. microprocera*, *C. macroprocera*, *C. elegans*, *C. rotundata*, *C. spinifera*, *C. loricata* and *C. rhynchena*, which are mentioned for the first time for the Adriatic sea fauna.

All the species are always present only at the deepest station and going towards the coast the number of species is diminishing. At the shallow stations (Fig. 2.1. and 2.2.) ostracods are more numerous in deeper layer in all seasons. The most numerous one is *Archiconchoecia striata*, the smallest Adriatic ostracod with the highest value of 3.4 specim./m³ in September 1993 at the P-100 A station, depth 100 - 50 m. It is also the maximal number of specimens of a particular species registered so far.

C. spirostris is most abundant in 200 - 50 m depth. Maximal number was found in April 1993 at P-1000 station, depth 200-100 m: 52 females, 42 males and 284 juveniles. Beneath 300 m is rare, represented particularly with adult females and males, rarely juveniles.

C. porrecta adriatica according to Angel (7) makes up 78.42 % of the ostracod fauna of the North Adriatic. In South Adriatic it is rare. The maximal number of specimens was collected in February 1995 at P-300 station, depth 100-50 m: 14 females, 6 males and 8 juveniles.

C. porrecta is also rare. In depth 200 - 50 m there were single juvenile females A1, and some adult females. Only one male specimen was found.

C. magna is large and well recognizable ostracod. It lives in the depth between 200 and 100 meters. It was represented with 3-4 specimens, and numerous juveniles.

C. curta is most abundant in depth 200-50 m. Maximal number was found in February 1995 at P-300 A station, depth 100-50 m: 26 females, 34 males and 28 juveniles. According to Deevey (8), *C. curta* forms denser populations between 100 and 400 m. In Adriatic its median level is 145 m (6).

C. echinulata has a similar shape as *C. curta*, but it is smaller. This species has just 5 pegs on the e - seta of the first antenna, *C. curta* has 8. Only two adult females were found.

C. procera is more abundant species then the previous one. The biggest part of population exists on the depth 300-50 m. Between 600 and 300 m it is also possible to find, but deeper then 600 m it was noted very rare, only as singles. Maximal number was found in April 1993 at P-1000 station, depth 300-200 m: 18 males, 17 females and 29 juveniles.

C. microprocera is smaller then *C. procera*. Maximal number is found in depths 300-50 m, but can be found as single specimen in deeper layers till 1000 m. In February 1995 at P-1000 station, depth 100-50 m, 12 females, 10 males and 42 juveniles were found.

C. macroprocera is abundant in the depths 300-100 m. Maximal number was recorded in February 1994 at P-300 station, depth 200-100 m: 25 females, 50 males and 32 juveniles. Instead of Adriatic species: *C. microprocera* and *C. macroprocera* a new recording from Tyrrhenian and Ionian seas (9) shows existence of *C. procera procera* and *C. procera mediterranea*.

C. elegans, the main population is between 400 and 300 m depth. At shallow stations P-100 and P-100A was found at the bottom of the water column. Maximal number was recorded in February 1994 at P-300 station, depth 300- 200 m: 77 females, 31 males and 119