

INFLUENCE OF THE SEDIMENT CHARACTERISTICS ON FORAMINIFERAL DISTRIBUTION IN THE KAŠTELA BAY (ADRIATIC SEA)

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Abstract

Foraminiferal distribution, granulometric composition, carbonate and organic matter contents were determined in recent sediments of the Kaštela Bay. The results indicate that foraminiferal distribution strongly depends on organic matter content, which is in direct correlation with granulometric composition and carbonate content.

Keywords : Sediments, Adriatic Sea, Foraminifera.

Introduction

The study performed at 9 stations in the Kaštela Bay, which is located in the central part of the eastern Adriatic coast. The Kaštela Bay is oval shaped, semi-enclosed bay, with surface of about 61 km² and 1.4 km³ total volume, separated from open sea by the Island of Čiovo and the Split Peninsula. The Bay is the most populated area on the Croatian coast, with develop industry in its eastern part.

Materials and Methods

Surface sediment samples(0-2cm) were collected using Van Ween grab sampler during the summer 2005. Immediately after sampling, the samples were frozen, stored at a temperature of -20 °C and freeze-dried in the laboratory.

Foraminiferal assemblages were studied from the fraction larger than 125 μm, on the aliquots containing about 300 foraminiferal specimens. The granulometric composition, carbonate and organic matter contents were determined too [1].

The aim of this study was to determine if there are any dependences between foraminiferal distribution and other investigated parameters.

Results and Discussion

According to foraminiferal distribution non metric Multi Dimensional Scaling (MDS) algorithm shows dissimilarity relations between stations [2]. Three groups are separated:

Station7 differs from all other stations having highest foraminiferal density (number of foraminifera on 1 g dry sediment), coarse grained sediment, highest carbonate and lowest organic matter contents. Epifaunal species *Asterigerinata mamilla*, *Criboelphidium decipiens* and *Lobatula lobatula* dominate the assemblage. Stations 1, 3, 6 and 9 are characterised by the lowest foraminiferal density (55-102 on 1 g dry sediment), lowest carbonate content and higher fine grained sediment. At these stations *Textularia agglutinans*, *Ammonia tepida* and *Bulimina aculeata* are dominant species. Stations 2, 4, 5 and 8 represent intermediate conditions concerning above mentioned groups, with *Criboelphidium decipiens* and *Ammonia tepida*as dominant species. These results indicate that in the Kaštela Bay foraminiferal distribution strongly depends on organic matter content, which is in direct significant relationship with granulometric composition and carbonate contents.

References

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