

BENTHIC OSTRACODS AS DEPTH INDICATORS

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Summary. Benthic ostracods show generally a well-defined depth range distribution. The knowledge of these data allows the paleoecological reconstructions through the time. Data on depth distribution of some ostracod species in the Bay of Naples are given.

Resumé. Les Ostracodes benthiques ont généralement une distribution verticale bien définie qui permette des réconstruction paléocologiques dans le temps. On donne ici des informations préliminaires sur la distribution vertical de quelques espèces d'Ostracodes dans la Baie de Naples.

The marine ostracod species are generally characterized by well defined relationships especially with the type of bottom and show a restricted bathymetrical range. It is consequently evident the interest of the paleoecologists for these small crustacea able to give reliable informations on paleoenvironments for both paleogeographical reconstruction and evolution of a basin. It should also be emphasized that most of the data utilized to understand the evolution of the Mediterranean after Miocene derives from the available information on ostracod ecology (Benson & Sylvester Bradley, 1970; Benson, 1973a; Benson 1969; Ruggieri, 1967).

The ecological information on the benthic Ostracods in the Mediterranean, and particularly in the Bay of Naples, is based on the work of G.W. Müller (1894) and Puri, Bonaduce & Malloy, 1964; Puri, Bonaduce & Gervasio, 1969; Uffenorde, 1972; Breman, 1976; Bonaduce, Ciampo & Masoli, 1976.

The Mediterranean Basin, during the first part of the Miocene was open to the Atlantic Ocean through the Iberian portal and was inhabited by an endemic ostracod fauna. The closing of the Iberian portal during the Messinian and the insufficient inflow of the rivers caused the so called "salinity crisis" during which the Mediterranean basin

dried up almost completely. The marine ostracod fauna was unable to adapt to the new extreme salinity conditions and disappeared. When, after the Messinian, the Iberian portal opened again a new ostracod fauna of Atlantic origin invaded the Mediterranean basin, adapted to the new environment and evolved through the Pliocene, Pleistocene and Quaternary until now. The present-time ostracod fauna inhabiting the Mediterranean amounts to more than 400 species.

We are presently working on the definition of the bathymetrical distribution of more of 350 benthic ostracods species inhabiting the Bay of Naples and their relationships with the different types of bottom.

The study of the variability of the species composition of the ostracod assemblage with depth and that of the variability of the percentage of each species with depth will hopefully give in the future more detailed informations.

The Table 1 gives informations on some of the species.

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Table 1.

| Depth | Type of bottom | Typical Ostracod Assemblage |
|----------|--------------------------------|--|
| 0-50 m | Green Algae | <i>Aurila convexa</i> , <i>Xestoleberis parva</i> , <i>X. communis</i> , <i>Sclerochilus contortus</i> , <i>S. levis</i> , <i>Paradoxostoma breve</i> , <i>P. taeniatum</i> , <i>P. atrum</i> , <i>P. simile</i> , <i>P. incongruens</i> , <i>P. intermedium</i> , <i>P. parallelum</i> , <i>Propontocypris succinea</i> . |
| 0-50 m | Sand | <i>Urocythereis margaritifera</i> , <i>Pontocythere turbida</i> , <i>Carinocythereis bairdi</i> , <i>Cytheretta subradiosa</i> , <i>C. adriatica</i> , <i>Cytheridea neapolitana</i> , <i>Semicytherura costata</i> , <i>S. incongruens</i> , <i>Loxoconcha stellifera</i> , <i>Triebelina raripila</i> , <i>Loxoconcha tumida</i> , <i>L. parallela</i> , <i>Callistocythere adriatica</i> , <i>Costa batei</i> . |
| 0-70 m | "Coralligenous" | <i>Polycope rostrata</i> , <i>P. frequens</i> , <i>P. tuberosa</i> , <i>Polycopsis compressa</i> , <i>Pontocypris acuminata</i> , <i>Bairdia formosa</i> , <i>B. longevaginata</i> , <i>B. reticulata</i> , <i>Xestoleberis margaritea</i> , <i>Buntonia giesbrechti</i> , <i>Macrocypris succinea</i> . |
| 50-90m | Mud+sand+detritus of Posidonia | <i>Buntonia subulata</i> , <i>B. sublatissima</i> , <i>Loxoconcha subrugosa</i> , <i>Carinocythereis antiquata</i> , <i>Krithe aff. K. praetexta</i> , <i>Cytherella vulgata</i> , <i>Cuneocythere semipunctata</i> , <i>Costa edwardsi</i> . |
| 90-200m | Yellow mud | <i>Bosquetina dentata</i> , <i>Pterygocythereis jonesi</i> , <i>Henryhowella sarsi</i> , <i>Rectobuntonia miranda</i> , <i>Polycope vasfiensis</i> . |
| 200-300m | Yellow mud | <i>Bairdia conformis</i> , <i>Macrocypris ligustica</i> , <i>Monoceratina mediterranea</i> . |
| 300 m | Oolitic and Pteropods mud | <i>Polycope inflata</i> n.sp., <i>Polycope orbulinaeformis</i> , <i>Bythocypris obtusata</i> , <i>B. tenera</i> , <i>Cytherella bathyalis</i> n.sp. |

