

NOTES ON MACROBENTHOS IN THE AREA FACING THE PO RIVER DELTA

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ABSTRACT: The report gives data of a survey made at depths down to 8 metres. Three main fauna assemblages are described. The low salinity and high sediment load encourage high densities of euryecious species. RESUME: Les Auteurs rapportent les données d'une campagne de prélèvements effectuée dans la zone côtière face au Delta du Pô, jusqu'à la profondeur de 8 mètres. Ils décrivent trois peuplements principaux. L'apport d'eau douce et de sédiment du Pô favorise des densités importantes en espèces euryèces.

During the summer of 1979 a preliminary survey of the macrobenthos (>1mm) in the area facing the Po Delta was performed. The samples, taken with a Van Veen grab (0.1 m²), were obtained from ten transects, over a distance of 27 km between the branches of the Po di Maistra and the Po di Gnocca. Three stations were chosen for each transect: 2.5, 5, and 8 m deep. This area is subject to considerable freshwater runoff from the branches of the Po river and communicates with several coastal lagoons. The salinity of bottom waters varied from 25 to 36‰. The Polychaete fauna of these samplings has been studied by L. Amoureux of Angers University.

The macrobenthos data were analyzed by a clustering technique, which enabled us to distinguish three main groups of stations having faunal similarity. A first group comprises almost all stations at the depth of 2.5 m, with a sandy bottom (71-95% sand). Lentidium mediterraneum is widely dominant, with a mean value of 130,000 ind/m² (95%). Balanus improvisus often occurs on Lentidium valves. Other species, with decreasing frequencies, are Spio decoratus, Cyclope neritea, Prionospio caspersi and Glycera convoluta. The fauna assemblage of this group of stations corresponds to "fine sand biocenosis in very shallow waters" (Pérès and Picard, 1964). Vatova (1967) described a similar biocenosis for the mouths of some northern Adriatic rivers; Massé (1972) found a biocenosis dominated by L. mediterraneum in Provence coastal waters subject to eutrophication from freshwater runoff. In the Black Sea, too, a L. mediterraneum community is well known.

The second group is chiefly composed of 5 m deep stations with sandy bottoms (80-90% sand), but also comprises both stations with finer sediments and stations 8 m deep. The most abundant species is Prionospio caspersi (mean value 3284 ind/m²), followed by Spisula subtruncata, Tellina fabuloides, Lentidium mediterraneum, and Nephtys hombergii. The fauna assemblage resembles the "fine well-sorted sand biocenosis" and is similar to that of some parts of the French Mediterranean coast (Massé, 1972).

The third group is made up of 8 m deep stations, both with sandy bottom and various mixtures of sand, silt and clay. The benthos is dominated by Owenia fusiformis (mean value 2581 ind/m²). Abra alba and Corbula gibba are also abundant, followed by Nephtys hombergii and Prionospio caspersi. Vatova (1967) described a similar biocenosis in the northern Adriatic, off the Venetian Lagoon. The most abundant species are known from a variety of environments with different bottom types, or even with sedimentary instability: thus the differences between the last two groups might be explained, apart from the depth, by the short-term variability of the granulometric features in the 8 m stations. In fact, seasonal cruises in the same area have confirmed this extreme variability.

In conclusion, all the three fauna assemblages identified in the infralittoral area facing the Po Delta are characterized by high densities, compared with similar Mediterranean benthic communities. These high densities are supported by species that are euryhaline and tolerate considerable runoff of organic substances and nutrients, as well as high sedimentation rates.

REFERENCES

- Massé, H., 1972 - Contribution à l'étude de la macrofaune des peuplements des sables fins infralittoraux des côtes de Provence. VII-Discussion, comparaison et interprétation des données quantitatives. Tethys, 4 (2): 397-422
- Pérès, J.M. and J. Picard, 1964 - Nouveau manuel de bionomie benthique de la Mer Méditerranée. Recueil des Travaux de la Station Marine d'Endoume, 31 (47): 1-137
- Vatova, A., 1967 - La fauna bentonica della costa occidentale dell'Alto Adriatico. Archivio Oceanografia Limnologia, 15 suppl.: 159 - 167.