

Is there a characteristic mollusc fauna in *Posidonia oceanica* (Linnaeus) DELILE in comparison to four other characteristic Mediterranean shallow water habitats of the Island of Elba (Italy)?

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Kiel, January 1999

Abstract

The seagrass *Posidonia oceanica* (Linnaeus) DELILE, endemic in the Mediterranean Sea, builds large beds in the infralittoral (DEN HARTOG 1977). Coarse sand is the preferred substrate (DEN HARTOG 1977). The seagrass, belonging to the *Potamogetonaceae*, fastens itself with expanded rhizomes in the sediment. The rhizome mats can reach a few meters of height (TARDENT 1993). The leaves can reach 120 cm length (RIEDL 1983). In fall they are shed and rebuild with the next spring (RIEDL 1983). In a seagrass meadow, up to 1000 shoots per m² can be found. However, the density is decreasing with increasing depth (RIEDL 1983).

The leaves and rhizomes of *Posidonia oceanica* function as a substrate and represent a special ecosystem with a characteristic fauna (TARDENT 1993). Gastropods and bivalves represent an important part of this fauna. Many gastropod species for example are known to be typical inhabitants of *Posidonia* meadows.

Additionally to *Posidonia oceanica*, other seagrass and seaweed species build up dense meadows in the Mediterranean infralittoral as well. In parts, these habitats also contain a comprehensive gastropod and bivalve fauna (PATZNER 1989).

Focus of the present study is a characterization of the mollusc fauna of *Posidonia oceanica* and a comparison with other habitats. Particular thought has been given to the following questions:

- Which species characterize the mollusc communities in the different habitats?
- Is there a special mollusc fauna in *Posidonia oceanica* meadows?

Fieldwork was carried out from June 28th till July 18th, 1998 at the field station of the HYDRA Institute for Marine Sciences, Island of Elba/ Italy. Five different marine habitats were observed.

The examined habitats can be differentiated in two groups. One group consists of the species- and individual-rich habitats given by *Posidonia oceanica*, *Halimeda tuna* and other seaweeds. The second group is represented by two *Caulerpa* species and proved to be considerably poorer in species number and abundance.

Cluster analyses showed that the similarity of the gastropod and bivalve fauna in the studied habitats is different. Gastropods represent the characteristic share of the fauna of each habitat. Looking at the bivalve fauna, it does not show such constancy.

This study confirms the assumption that *Posidonia oceanica* exhibits a characteristic mollusc fauna.

Typical species of bivalves are represented by *Striarea lactea*, *Musculus costulatus*, *Glans spp.* and *Chlamys hyalina*. Though the first three species mentioned are also found in the other habitats, their abundances are comparatively small. Regarding the gastropod species, *Jujubinus exasperatus*, *Tricolina speciosa*, *Alvania lineata*, *Rissoa auriscalpium* and *Bittium reticulatum* were found to be typical.