

VERTICAL ZONATION OF VAGILE FAUNA FROM THE FOLIAR STRATUM OF A *POSIDONIA OCEANICA* BED. ISOPODA.

by

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Résumé: On donne la liste des Isopodes associés aux Posidonies de l'île d'Ischia avec quelques remarques sur leur distribution verticale à l'intérieur de l'herbier.

Although there are several qualitative papers about the fauna associated with *Posidonia* bed, precise and quantitative studies are still needed. A research program on this subject is in progress since several years at the Benthic Ecological Laboratories of the Zoological Station of Naples. The present paper deals with a collection of Isopods from the *Posidonia* bed of Punta Vico, near Lacco Ameno (island of Ischia), a biotope whose general features have been described by GIRAUD et al. (1979). The material was obtained from a series of 36 samples collected in the late Autumn 1979 at 12 stations located along a transect from -1m to -30m, with the aid of a hand net (400  $\mu$ mesh size) according to the technique described by LEDOYER (1962). On the whole, 218 individuals belonging to 17 species have been found. Among these, the Epicaridea are mentioned here for completeness sake, although it is evident that these internal parasites do not come within a study of vagile fauna. The species and their own respective number of individuals (in brackets) are: *Gnathia* cf. *inopinata* Monod (1), *Gnathia* sp., *Gnathia maxillaris* (Mont.) (54) (4), *Kupellonura serritelson* Wagele (1), *Paranthura nigropunctata* (Lucas) (14), *Jaeropsis dollfusi* Norman (8), *Disconectes* sp. (1), *Munna* sp. (1), *Idotea hectica* (Pallas) (9), *Synisoma appendiculatum* (Leach) (18), *Astacilla mediterranea* Koehler (83), *Meinertia italica* (Schiödte & Meinert) (1), *Anilocra physodes* (L.) (1), *Nerocila bivittata* (Risso) (1), *Cymodoce hansenii* Dumay (16), *Dynamene bicolor* (Rathke) (3), Bopyridae gen. sp. (2). The majority of these species are already known from *Posidonia* beds. The available information allows to approximately subdivide them into three groups: a) species "classically" described as characteristic of the foliar stratum: *I. hectica*, *S. appendiculatum*, *A. mediterranea*; b) forms occasionally found on the leafage: *Munna*, *Dynamene*, juveniles of *Cymodoce*; c) species associated to the rhizome stratum: *K. serritelson*, *P. nigropunctata*. Other forms, such as the juveniles of *Gnathia* and Cymothoidae, are likely to rest on leaves only occasionally, at least in particular stages of their life cycle as they are parasites on fishes known to inhabit *Posidonia* prairie (ROMAN, 1970; MONOD, 1926). As far as we know, the remaining species have not been yet recorded from *Posidonia* beds: *G. cf. inopinata*, *J. dollfusi*, *Disconectes* sp.

The study of such a small collection obviously provides only a preliminary ecological insight, also considering that 7 of the 17 species listed above are represented by a single specimen. It is nevertheless interesting to perform a quantitative analysis as data on Isopods vertical distribution in *Posidonia* beds are lacking.

The total abundance and the species richness show the same pattern (fig.1) in relation to depth. In fact both curves have two peaks: one at 4 m and another at 12 m. These peaks, the first of which is lower for both the parameters, persist after the curve have been smoothed by a least-square method. The analysis of the faunistic affinities between the different stations, performed utilising the SOERENSEN similarity coefficient, reveals that two assemblages exist comprising the samples between 3 and 6 m (mean similarity: 52.37) and are consisting of the samples between 10 and 15 m (mean similarity: 73.97). These two assemblages, whose similarity coefficient is rather low (25), seem to correspond to the "peak areas" of abundance and species richness curves. As far as the distribution of the individual species is concerned, and neglecting those represented by a single specimen, it can be stated that no species is exclusive of the extremities of the transect. Some taxa are distributed over the whole transect as is the case of *Gnathia* juveniles (this is possibly in relation with the swimming capability of Gnathiid larvae) and of *S.appendiculatum*. Other species have a wide distribution but lack in the shallowest stations. *A.mediterranea*, for instance, occurs throughout the transect starting from 4 m and its numerical dominance increases with depth. Finally, some species (e.g. *C.hanseni* and *P.nigropunctata*) tend to group in intermediate stations. From the above consideration, it is quite clear that Isopods syntaxon is not homogeneous in its vertical distribution. Two cenotic units, a superficial (3-6 m) and an intermediate one (10-15 m) seem to exist, which seem to be counter-selected at the shallowest and at the deepest portions of the transect respectively. The intermediate unit, as is the case of other syntaxa, is the reachest and the most diverse one.

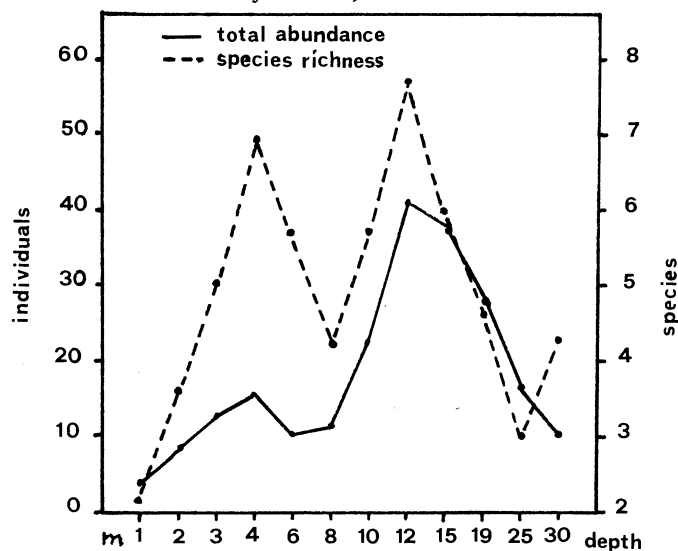


Fig. 1

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