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A NEW RECORD FOR THE MEDITERRANEAN SEA:  
*PODARKEOPSIS CAPENSIS* (POLYCHAETA, HESIONIDAE)

**Riassunto** — *Podarkeopsis capensis* (*Polychaeta, Hesionidae*) nuovo per il Mediterraneo. Viene segnalato il primo ritrovamento in Mediterraneo della specie *Podarkeopsis capensis* (DAY, 1963) (*Polychaeta, Hesionidae*).

Tale specie, finora segnalata soltanto per l'emisfero meridionale e per il Canale della Manica, è stata trovata in due lagune poli-eualine dell'Italia Centrale (Sabaudia, Lazio) e della Sardegna (Santa Gilla). Essa sembra essere una specie in grado di colonizzare e sopravvivere in ambienti stressati e soggetti ad arricchimento organico.

Viene inoltre effettuato un confronto con le specie più simili dello stesso genere.

**Abstract** — The first record of *Podarkeopsis capensis* (DAY, 1963) (*Polychaeta, Hesionidae*) for the Mediterranean Sea is reported.

The species was found in two brackish lagoons one of Central Italy and the other of Sardinia, while hitherto it was known only for the Southern emisphere and for the British Channel. *P. capensis* seems to be able to colonize and survive in stressed and organically enriched environments.

A brief comparison with similar species of the genus is reported.

**Key words** — *Polychaeta* - *Hesionidae* - Mediterranean Sea - coastal lagoons.

## INTRODUCTION

The genus *Podarkeopsis* LAUBIER, 1961 belongs to the family Hesionidae and includes 6 species (PERKINS, 1984). It is characterized by three antennae, biarticulated palps, eight pairs of tentacular cirri and biramous parapodia. The type species of the genus is *Podarkeopsis galangai* LAUBIER, 1961.

In the Mediterranean Sea two species of the genus were known: *Podarkeopsis galangai* living on muddy coastal bottoms (LAUBIER,

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1961) and *Podarkeopsis arenicolus* (LA GRECA, 1947), found on sandy littoral bottoms of the Tyrrhenian Sea of Naples.

In the framework of ecological studies on benthic communities of some lagoons in Central Italy, some specimens of Polychaeta Hesionidae were ascribed to the species *Podarkeopsis capensis* (DAY, 1963) which resulted new for the Mediterranean Sea.

The species *P. capensis* was firstly described by DAY (1963) as *Oxydromus capensis* and recorded from the West coast of the Cape Province (South Africa), from the Solomon and the Cook Islands (GIBBS, 1971, 1972) and from the South coast of Cornwall (GIBBS and PROBERT, 1973). FAUCHALD (1977) considered *Oxydromus* GRUBE, 1855 as synonymous of *Gyptis* MARION and BOBRETZKY, 1875 and finally PERKINS (1984) referred the species *Gyptis capensis* to the genus *Podarkeopsis* LAUBIER, 1961.

## MATERIAL AND METHODS

### *Description of examined material*

One hundred seventy one specimens were collected and examined. 167 were found in the lagoon of Sabaudia (Latium) and 4 specimens in the lagoon of Santa Gilla (Sardinia), which are both brackish environments with salinity ranging from 25 to 35‰ (Fig. 1).

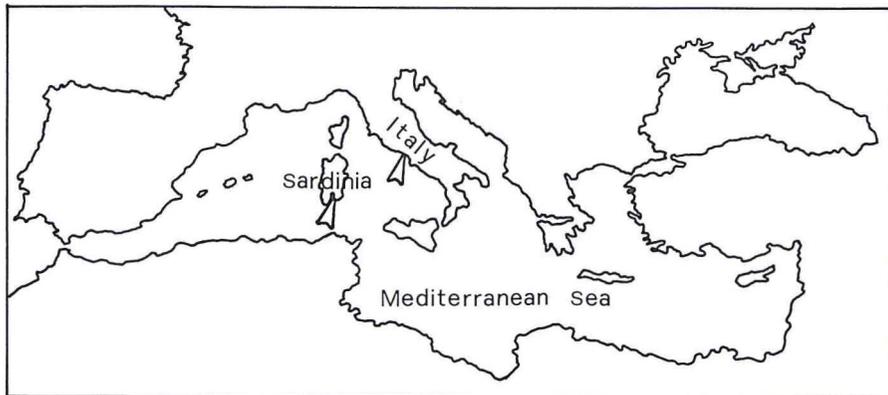


Fig. 1 - The recorded sites of *Podarkeopsis capensis* (Day, 1963) in the Mediterranean Sea.

In the lagoon of Sabaudia the specimens of *P. capensis* were

collected very abundantly in all seasons in 1982, 1983, 1984 and in the lagoon of Santa Gilla they were collected in July, in September and in October 1986.

Several specimens were lacking of the last segments and of some tentacular and parapodial cirri. Most of the worms of 36-37 setigers measured 9 mm in length, 8 mm for 33 setigers and 6 mm for 31 setigers. The specimens from the lagoon of Sabaudia have been compared with the holotype of *P. capensis* in the collections of the British Museum of Natural History and appeared to be identical with it. In particular head region, parapodia and forked notosetae agree in all details.

## DISCUSSION AND CONCLUSION

### *Comparison with similar species*

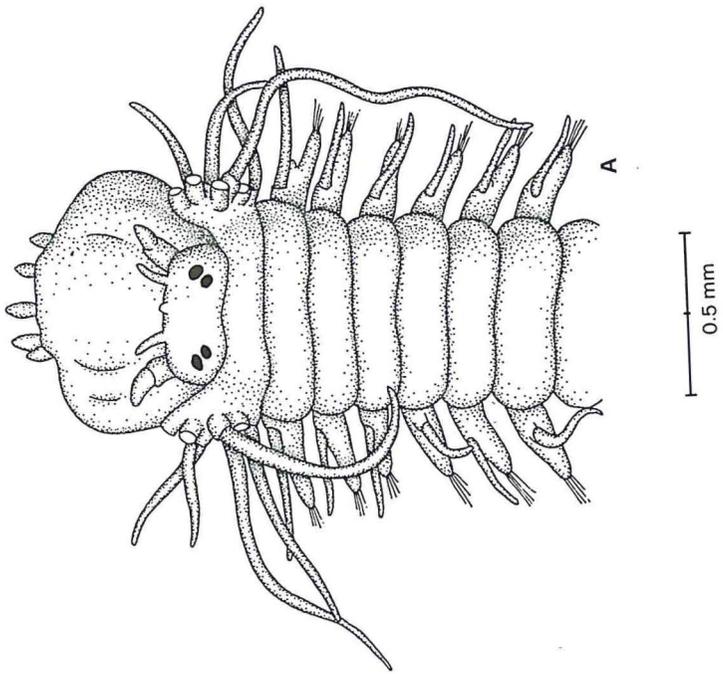
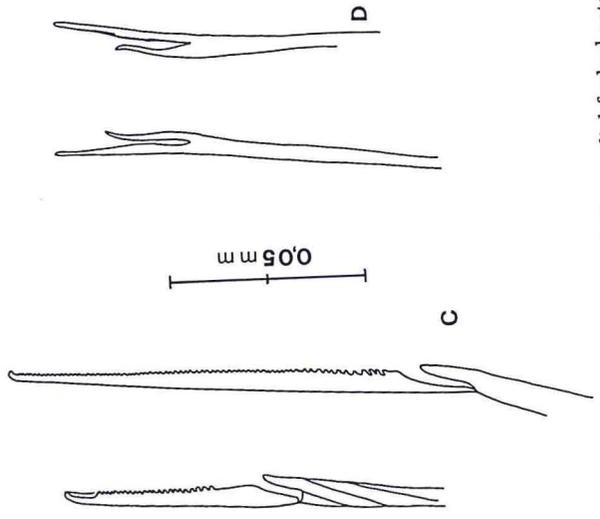
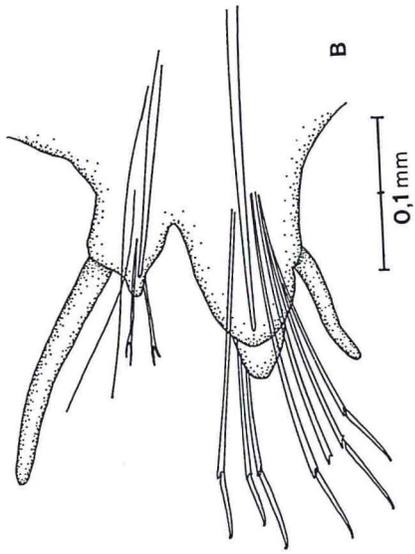
*Podarkeopsis capensis* (DAY, 1963) mainly differs from *P. galangai* LAUBIER, 1961 for:

- the shape of the forked setae (LAUBIER, 1961: fig. 1b);
- the relative lengths of the tentacular and dorsal cirri;
- the anterior end, which has the first two tentacular segments dorsally reduced in *P. capensis* while only the first one is reduced in *P. galangai*.

Furthermore *P. capensis* (DAY, 1963) is close to *P. arenicolus* (LA GRECA, 1947), in having ten widely spaced papillae along the margin of proboscis, but it differs from *P. arenicolus* in the following features:

- absence of numerous fringes among the marginal papillae of the proboscis which are present in *P. arenicolus*;
- the tentacular and dorsal cirri, which are smooth in *P. capensis* and annulated in *P. arenicolus*;
- the notosetae which includes only few long capillar setae in *P. arenicolus* and both capillar and forked setae in *P. capensis* (Fig. 2D). Neurosetae are instead compound with blades of varying length in both species.

Finally, according to BANSE and HOBSON (1968), *P. capensis* seems to be very close also to *Podarkeopsis brevipalpa* (HARTMANN SCHRODER, 1959), a species collected along the Pacific coast of North and Central America.



*Ecological and zoogeographical notes*

Till now *P. capensis* was recorded for the Southern hemisphere: in Saldanha Bay (South Africa) it was collected from 40 to 150 meters depth in muddy sediment (DAY, 1963) and in the Solomon and Cook Islands it was collected on silty sand bottom (GIBBS, 1971, 1972). For the Northern hemisphere *P. capensis* was recorded from deposits with high silt-clay content at 9-13 meters depth off the South coast of Cornwall (GIBBS and PROBERT, 1973).

Our record in the Mediterranean Sea is a further contribution to the ecology of this species. *P. capensis* resulted as inhabiting the soft bottom of brackish ecosystems, characterized by high instability of the physical-chemical parameters.

In the two Italian lagoons the specimens of *P. capensis* were collected from 1 to 2 meters depth together with some species which are considered «opportunistic», such as *Polydora ciliata* and *Capitella capitata*. Furthermore, some specimens were recorded in an artificial basin, close to the lagoon of Santa Gilla, only two months after its excavation and filling (G. Carrada pers. comm.). Therefore *P. capensis* can be considered a pioneer species which is able to colonize new environments and to survive in stressed and organically polluted areas, as the Hesionidae often do (ZUNARELLI-VANDINI, 1971; SCHRAM and HAALAND, 1984).

Living material from the lagoon of Sabaudia was cultured in laboratory for several months, allowing some observations on the feeding behavior of the species. *P. capensis* fed on freeze-dried spinaches and a large quantity of fecal pellets were observed. Therefore, it may be supposed that *P. capensis* is an herbivorous species and probably integrates its diet with detritus, as HAALAND and SCHRAM (1982) found for *Gyptis rosea*.

Finally, the finding of *P. capensis* in the Mediterranean Sea is also a contribution to the study of the zoogeography of Polychaetes. In the light of these new records, the species can be thought of as cosmopolitan, as already resulted for *Fabricia filamentosa* and *Desdemona ornata*, recently recorded in the Mediterranean Sea (GIANGRANDE and CASTELLI, 1986; LARDICCI and CASTELLI, 1986).

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