**PILUMNUS INERMIS** (DECAPODA, BRACHYURA) IN THE STRAITS OF MESSINA AND THE SOUTHERN TYRRHENIAN SEA (MEDITERRANEAN SEA): DISTRIBUTION AND SOME ASPECTS OF ITS ECOLOGY

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**ABSTRACT**

In this paper, information is given on the ecology and distribution of *Pilumnus inermis* A. Milne-Edwards & Bouvier, 1894, in the Mediterranean Sea. Also, morphometric and biological data about Mediterranean specimens, especially involving populations in the Straits of Messina, are presented.

Seventy-two specimens were found over a bathymetric range of 10 to 206 m. The better part of these (60 specimens), were found in the Straits of Messina. Specimens were found on hard and soft substrata, but biogenic hard bottoms were preferred.

Finally, Mediterranean specimens are clearly smaller than Atlantic ones, but their carapace sizes show the same width/length ratios.

**RIASSUNTO**

In questo lavoro vengono fornite informazioni sull’ecologia e la distribuzione di *Pilumnus inermis* A. Milne-Edwards & Bouvier, 1894, nel Mediterraneo. Sono inoltre presentati dati morfometrici e biologici sugli esemplari mediterranei, con particolare riferimento alle popolazioni dello Stretto di Messina.

Settantadue esemplari sono stati campionati in un intervallo batimetrico compreso fra 10 e 206 m, sia su fondi duri che su fondi mobili, ma con maggior frequenza su fondi duri circalitorali. La maggior parte di questi (60 esemplari), è stata campionata nello Stretto di Messina.

Gli esemplari rinvenuti hanno dimensioni comprese fra 2.6 e 17.9 mm di larghezza del carapace, corrispondenti a 2.1 e 14.45 mm di lunghezza totale del carapace. Dal confronto con i dati di letteratura su esemplari raccolti in Atlantico e nel Mediterraneo si evidenzia lo stesso rapporto larghezza/lunghezza del carapace, anche se gli esemplari mediterranei sono nettamente più piccoli di quelli atlantici.

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INTRODUCTION

The distribution patterns of Mediterranean Brachyura might well have important implications for Mediterranean biogeography, but there is no complete study available as yet. Detailed lists of Mediterranean species have been reported only by Zariquey Alvarez (1968) and D’Udekem d’Acoz (1999). Recent reports have provided further data testifying that the known distribution patterns of various species are still problematic (Giacobbe & Spanò, 1996; Spanò et al., 1999). An appropriate example is that of *Pilumnus inermis* A. Milne-Edwards & Bouvier, 1894, which has previously been recorded as an exclusively Atlantic species (e.g., Manning & Holthuis, 1981), but which has recently been found in the western Mediterranean (Falciai, 1997; Rinelli et al., 1998; Spanò et al., 1998; Giordano et al., 1999). Furthermore, a population already recorded in the Straits of Messina by Di Geronimo & Fredj (1987), was sampled again during some recent oceanographic cruises (Giacobbe et al., 1996; Spanò, 1998). In this paper, all records taken by the authors are reported so as to contribute to the information on the ecology and distribution of *P. inermis* in the Mediterranean Sea. Furthermore, some morphometric and biological data about Mediterranean specimens, especially regarding populations in the Straits of Messina, are given.

MATERIALS AND METHODS

Specimens of *Pilumnus inermis* were collected during various oceanographic cruises in the southern Tyrrhenian Sea and in the Straits of Messina, between 1994 and 1996 (fig. 1). In the former area, which extends from Cape S. Vito (western Sicily) to Cape Suvero (western Calabria), collecting was carried out by trawl net, whereas in the Straits of Messina, a modified “Van Veen” grab and an epibenthic sledge were employed to sample on soft bottoms. The grab had a 70 dm$^3$ and 0.25 m$^2$ sampling capacity, the sledge 600 dm$^3$. Hard bottoms were sampled by a triangular dredge reaching 0.20 m$^2$ of mouth aperture. Because of the extremely rough, hard bottoms, the dredge was not dragged, so that each sample can be considered to be the yield from a single grip. Because of the very steep slope of the bottom, the echo sounder often measured depths that differed some meters from that of the bottom really sampled; for this reason, depths of grab and triangular dredge samples are given in table I as “meters of outboard vertical cable”. For trawl net and epibenthic sledge, initial and final depths are given. Living macrofauna was separated from the grab and dredge samples by sieving through a 1 mm mesh screen. Specimens were fixed in alcohol 70%. For each specimen, sex was determined and the possible presence of ovigerous females was verified. Carapace width and carapace total length were measured. Bottom features were recorded and benthic