

DECAPOD AND STOMATOPOD CRUSTACEANS FROM THE
TRAWLABLE BOTTOMS OF THE SICILIAN CHANNEL (CENTRAL
MEDITERRANEAN SEA)

BY

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ABSTRACT

78 species of decapod and stomatopod crustaceans were collected during a two-year survey on the trawlable bottoms of the Sicilian Channel. Bathymetric range, size range, size of the smallest ovigerous females and their period of occurrence are given. Some brief remarks on *Parasquilla ferussaci*, *Pontophilus norvegicus* and *Maja goltziana* are made.

RESUMEN

78 especies de crustáceos decápodos y estomatópodos han sido capturadas durante una campaña de dos años en los fondos arrastrables del Canal de Sicilia. En este trabajo se muestran el range batimétrico, el range de talla, el tamaño y el periodo de presencia de las hembras ovigeras. Además se hace una breve discusión sobre *Parasquilla ferussaci*, *Pontophilus norvegicus* y *Maja goltziana*.

INTRODUCTION

In the Mediterranean Sea, decapod crustaceans have been the subject of many important scientific papers, but the more important recent contributions regarding the Sicilian Channel are those contained in reports of explorative trawl surveys carried out about two decades ago (Sarà, 1969; Bombace & Sarà, 1972; Arena & Li Greci, 1973). Indeed, the Sicilian Channel is a very interesting area joining the eastern and western Mediterranean basins. Despite of this, the only papers dealing specifically with the decapod fauna are some concerning only the Tunisian and Lybian waters (e.g., Colosi, 1923; Heldt, 1949, 1950; Forest & Guinot, 1956; De Saint Laurent, 1971).

The present contribution deals with the decapod and stomatopod crustaceans collected on the trawlable bottoms of the "Italian half" of the Channel. It shows once more how experimental trawl surveys give the zoologists the opportunity of extending the knowledge of many benthic and nektonic species, both for what concerns the biological aspects and the distributional ones.

Eight experimental trawl surveys were carried out seasonally by I.T.P.P.-C.N.R. in the period May 1990 – April 1992. A bottom otter trawl with an 18 mm mesh in the cod end was used; a stratified random sampling design was followed and 777 hauls were made on the whole. The area investigated is shown in figure 1.

Crustaceans were deep-frozen on board immediately after the catch; afterwards they were stored in 5% buffered formalin, and then in 75% ethanol for definitive preservation.

RESULTS

78 crustacean species were collected including 3 Stomatopoda, 7 Penaeidea, 19 Caridea and 49 Reptantia. Only 33 of these have already been reported by Sará (1969), Bombace & Sará (1972) and Arena & Li Greci (1973). The taxonomic list, along with details concerning size range, length of the smallest ovigerous females and their period of presence, and the depth range are shown in table I.

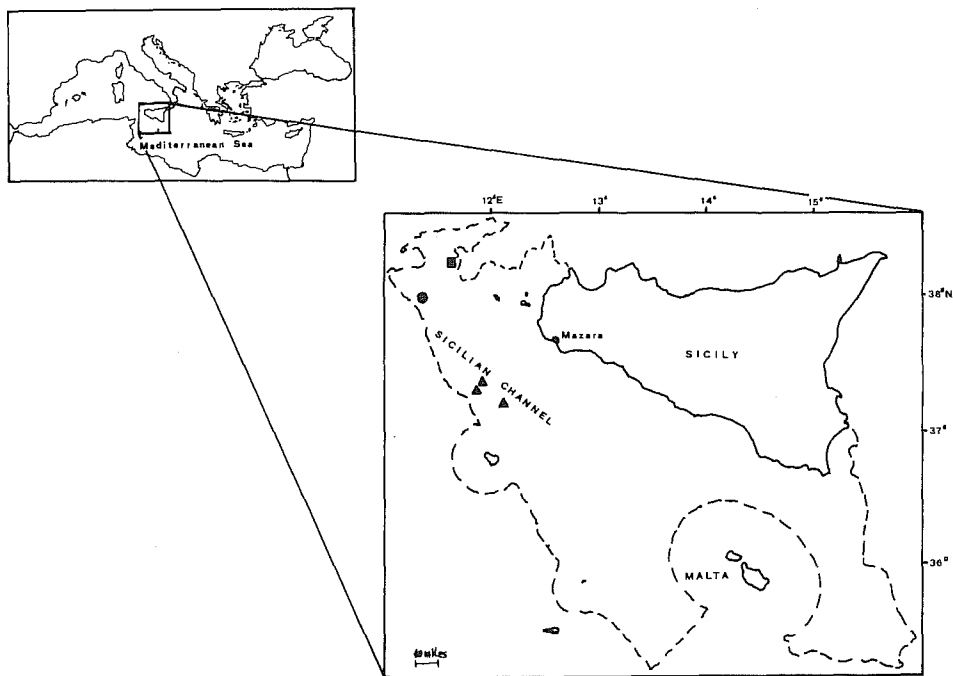


Fig. 1. Map of the area. - - - -: boundaries of the research area. Collection sites: ● *Parasquilla ferussaci*; ■ *Pontophilus norvegicus*; ▲ *Maja goletziana*.

List of the species collected. Sizes in mm. (Stomatopoda: total length; Penaeidea and Caridea: carapace length without rostrum; Reptantia: carapace length with rostral spines). S.R.: size range. L.O.F.: length of the smallest ovigerous females. M.O.F.: month of occurrence of ovigerous females. D.R.: depth range (in m.)

SPECIES	S.R.	L.O.F.	M.O.F.	D.R.
STOMATOPODA				
PSEUDOSQUILLIDAE Manning, 1977				
<i>Parasquilla ferussaci</i> (Roux, 1830)	70			581
SQUILLIDAE Latreille, 1803				
<i>Rissoides pallidus</i> (Giesbrecht, 1910)	46-76			100-388
<i>Squilla mantis</i> (L., 1758)	75-187			11-318
DECAPODA PENAIDEA				
ARISTEIDAE Wood-Mason, 1891				
<i>Aristaeomorpha foliacea</i> (Risso, 1827)	12-69			307-784
<i>Aristeus antennatus</i> (Risso, 1816)	24-57			338-784
<i>Solenocera membranacea</i> (Risso, 1816)	13-26			35-742
PENAIDEAE Rafinesque, 1815				
<i>Parapenaeus longirostris</i> (Lucas, 1846)	7-38			26-750
<i>Penaeus kerathurus</i> (Forskål, 1775)	30-40			11-36
<i>Sicyonia carinata</i> (Brünnich, 1768)	9-18			15-16
SERGESTIDAE Dana, 1852				
<i>Sergia robusta</i> (Smith, 1882)	15-21			463-768
DECAPODA CARIDEA				
PASIPHAEIDAE Dana, 1852				
<i>Pasiphaea multidentata</i> Esmark, 1866	12-39	31	I, XI, XII	532-733
<i>Pasiphaea swado</i> (Risso, 1816)	13-23	16	I, V, IX, X, XI, XII	298-631
OPLOPHORIDAE Dana, 1852				
<i>Acanthephyra eximia</i> Smith, 1884	23-34	26	VI, VII	733
PANDALIDAE Haworth, 1825				
<i>Chlorotocus crassicornis</i> (Costa, 1871)	11-20	12	I to XII	69-742
<i>Plesionika acanthonotus</i> (Smith, 1882)	11-16	12	V	141-784
<i>Plesionika antigai</i> Zariquiey Alvarez, 1955	9-15	9	I, V, XI, XII	163-509
<i>Plesionika edwardsii</i> (Brandt, 1851)	14-27	23	III	362-494
<i>Plesionika gigliolii</i> (Senna, 1903)	12-17	13	V	249-603
<i>Plesionika heterocarpus</i> (Costa, 1871)	7-20	9	I to XII	128-578
<i>Plesionika martia</i> (A. Milne Edwards, 1883)	13-20	17	I to XII	260-784
ALPHEIDAE Rafinesque, 1815				
<i>Alpheus glaber</i> (Oliv, 1792)	8-13	8	I, V, VIII, IX, XI, XII	55-512
PROCESSIDAE Ortmann, 1896				
<i>Processa canaliculata</i> Leach, 1815	13-17	15	I, V, XI, XII	104-603
<i>Processa noveli</i> Al-Adhub & Williamson, 1975	10	10	V	400
PALAEMONIDAE Rafinesque, 1815				
<i>Palaemon serratus</i> (Pennant, 1777)	14-20	—	—	11
CRANGONIDAE Haworth, 1825				
<i>Philocheiras echinulatus</i> (M. Sars, 1861)	8-10	10	I, XI	307-512
<i>Pontocaris cataphractus</i> (Oliv, 1792)	8-12	9	I to XII	15-389
<i>Pontocaris lacazei</i> (Gourret, 1887)	9-13	11	V, VI, VII	207-728
<i>Pontophilus norvegicus</i> (M. Sars, 1861)	10	—	—	704
<i>Pontophilus spinosus</i> (Leach, 1815)	9-13	11	II, III	161-512

<i>Nephrops norvegicus</i> (L., 1758)	15-61			104-768
POLYCHELIDAE Wood-Mason, 1875				
<i>Polycheles typhlops</i> Heller, 1862	16-46	26	II, III, V, VIII, IX	318-750
PALINURIDAE Latreille, 1803				
<i>Palinurus elephas</i> (Fabricius, 1787)	52-105			18-199
SCYLLARIDAE Latreille, 1825				
<i>Scyllarus arctus</i> (L., 1758)	13	—		11
<i>Scyllarus pygmaeus</i> (Bate, 1888)	12	12	VI	66
CALOCARIDIDAE Kensley, 1989				
<i>Calocaris macandreae</i> Bell, 1846	11-13	—	—	386
DIOGENIDAE Ortmann, 1892				
<i>Dardanus arrosor</i> (Herbst, 1796)	11-18	14	IX	51-669
<i>Paguristes eremita</i> (L., 1767)	6-12	7	I, V, VI, XI, XII	11-82
PAGURIDAE Latreille, 1803				
<i>Pagurus alatus</i> (Fabricius, 1775)	3-9	3	V, VIII, IX	300-768
<i>Pagurus anachoretus</i> Risso, 1826	1.4	—	—	33
<i>Pagurus cuanensis</i> Bell, 1845	4-7	—	—	51-88
<i>Pagurus prideaux</i> Leach, 1815	4-12	6	I to XII	66-386
GALATHEIDAE Samouelle, 1819				
<i>Galathea dispersa</i> Bate, 1859	11-15	11	V	33-170
<i>Galathea intermedia</i> Lilljeborg, 1851	2.1-8	4.3	V, VI, IX	33-75
<i>Munida intermedia</i> A. Milne Edwards & Bouvier, 1899	17-32	17	I, XI, XII	216-677
DROMIIDAE de Haan, 1833				
<i>Dromia personata</i> (L., 1758)	10-47	—	—	49-77
HOMOLIDAE White, 1857				
<i>Homola barbata</i> (Fabricius, 1793)	12-39	20	II, III, IX	55-528
<i>Paromola cuvieri</i> (Risso, 1816)	32-142	83	I, VIII, IX, XI	267-795
LATREILLIIDAE Stimpson, 1858				
<i>Latreillia elegans</i> Roux, 1830	7-14	9	V, VII, IX	82-512
DORIPPIDAE MacLeay, 1838				
<i>Ethusa mascarone</i> (Herbst, 1785)	9-14	—	—	15-66
<i>Medorippe lanata</i> (L., 1767)	7-26	21	VI, IX	24-128
CALAPPIDAE de Haan, 1833				
<i>Calappa granulata</i> (L., 1758)	6-75	—	—	34-179
ATELECYCLIDAE Ortmann, 1893				
<i>Atelecyclus rotundatus</i> (Olivi, 1792)	21	—	—	95
PORTUNIDAE Rafinesque, 1815				
<i>Bathynectes maravigna</i> (Prestandrea, 1839)	14-46	28	I, XI	307-795
<i>Liocarcinus corrugatus</i> (Pennant, 1777)	6-22	—	—	66-197
<i>Liocarcinus depurator</i> (L., 1758)	16-39	24	I to XII	16-351
<i>Liocarcinus vernalis</i> (Risso, 1816)	17-26	—	—	11-51
<i>Macropipus tuberculatus</i> (Roux, 1830)	15-34	15	I, XI, XII	82-581
<i>Portunus hastatus</i> (L., 1767)	14-18	—	—	15
GERYONIDAE Colosi, 1923				
<i>Geryon longipes</i> A. Milne Edwards, 1881	26-59	—	—	603-768
XANTHIDAE Dana, 1851				
<i>Monodaeus couchii</i> (Couch, 1851)	7-21	—	—	73-578
<i>Pilumnus spinifer</i> H. Milne Edwards, 1834	4-13	9	V, VI, IX	33-128
GONEPLACIDAE MacLeay, 1838				
<i>Goneplax rhomboides</i> (L., 1758)	9-16	16	I, XI, XII	36-574
PARTHENOPIIDAE MacLeay, 1838				
<i>Parthenope angulifrons</i> Latreille, 1825	15-21	—	—	11-16
<i>Parthenope macrochelos</i> (Herbst, 1790)	15-41	25	VI	69-655
<i>Parthenope massena</i> (Roux, 1830)	12-14	—	—	69-388

<i>Ergasticus clouei</i> Studer, 1883	9-21	9	VIII, IX	647-669
<i>Eurynome aspera</i> (Pennant, 1777)	12-15	—	—	62-111
<i>Inachus communissimus</i> Rizza, 1839	8-17	10	V, VI	11-20
<i>Inachus dorsettensis</i> (Pennant, 1777)	6-16	8	I to XII	55-157
<i>Inachus thoracicus</i> Roux, 1830	8-20	12	V	49-82
<i>Lissa chiragra</i> (Fabricius, 1775)	33	—	—	49
<i>Macropodia longipes</i> (A. Milne Edwards & Bouvier, 1899)	17-25	21	II, III, VIII, IX	46-421
<i>Macropodia rostrata</i> (L., 1761)	7-24	10	V	11-97
<i>Maja crispata</i> Risso, 1827	35-62	—	—	24-66
<i>Maja goltziana</i> d'Oliveira, 1888	27-116	99	XI	91-163
<i>Maja squinado</i> (Herbst, 1788)	58	—	—	75
<i>Pisa armata</i> (Latreille, 1803)	14-57	29	V	33-148

REMARKS ON SOME SPECIES

Parasquilla ferussaci (Roux, 1830). — This stomatopod has been recorded only a few times from the Eastern Atlantic and the Mediterranean (see Biscoito, 1985); Arena & Li Greci (1973) collected one specimen on a sandy-muddy bottom at a depth of 505-650 m, just a few miles west of our collection site.

We found one female of 70 mm TL (= total length) (18 mm CL (= carapace length)) at a depth of 581 m in May 1990.

Pontophilus norvegicus (M. Sars, 1861). — This crangonid shrimp is common in the Northern Atlantic, both on the west coast (north of New York) and on the east coast (north of the Bay of Biscay). The first Mediterranean report was from the Balearic Islands (Forest, 1965); then Relini Orsi & Relini (1972) collected this species from the Ligurian mesobathyal muddy bottoms, where it was the commonest crangonid. Abelló & Valladares (1985) found many specimens in the Catalan Sea.

We collected just one female of 10 mm CL in September 1990, on a muddy bottom with *Isidella elongata* at 704 m. Ours is the most southern report of the species.

Maja goltziana d'Oliveira, 1888. — This spider crab is known from the Eastern Atlantic, from Portugal to Congo, including Annobon and Principe Islands; the previous Mediterranean reports known to us are from Israel, Egypt, Adriatic Sea (Venice) and Ionian Sea. After Zariquiey Alvarez (1968) the depth distribution is from 15 to 200 m, and ovigerous females are found in April.

We found 5 specimens in November 1991, one of which was an ovigerous female. Table II gives more details.

Details about the specimens of *Maja goltziana* collected in the Sicilian Channel

DATE	SIZE (mm)	SEX	DEPTH (m)	BOTTOM
22 Nov. 91	116 x 73	m	163	mud with Funiculina
26 Nov 91	78 x 65	m	97	coralligenous with Cidaridae
26 Nov 91	27 x 18	f	97	coralligenous with Cidaridae
26 Nov 91	99 x 68	ov. f	91	coralligenous with Cidaridae
26 Nov 91	97 x 64	m	91	coralligenous with Cidaridae

DISCUSSION

Owing to the fairly long period of collection and to the rather great number of samples, it has been possible to extend the knowledge of the biology and ecology of many species. In fact, depth ranges in several cases resulted to be wider than those reported in the Mediterranean literature, especially the deeper side of the range, and the same happens for the periods in which ovigerous females were found (Zariquiey Alvarez, 1968; Garcia Raso, 1984; Fischer et al., 1987).

Of course the present paper is far from completing the knowledge of the carcinological fauna of the area; many of our samples still have to be examined, and besides this our sampling method (originally aimed at the appraisal of fishable resources) did not allow us to collect either specimens from coastal rocky bottoms, or pelagic species. More extensive studies are needed, especially on the coralligenous banks of the Channel, and a greater variety of sampling gears should be used.

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