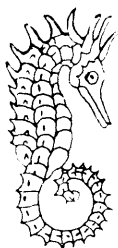


*Composto e impresso nas Oficinas da «Imprensa de Coimbra, L.da»  
Largo de S. Salvador, 1 a 3 — COIMBRA*



# ARQUIVOS DO MUSEU BOCAGE

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## ON A SMALL COLLECTION OF CRUSTACEA DECAPODA FROM SAGRES (ALGARVE)

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This study concerns a collection of CRUSTACEA DECAPODA captured in Sagres (Algarve, see Fig. 1) between the 1<sup>st</sup> and the 29<sup>th</sup> of May 1988 at a depth of 0 to about 30 m. The material examined was offered to the «Museu Bocage» by Mr. LUIS BURNAY (Centro de Zoologia, I.I.C.T.) to whom this Institution is very grateful.

The collection is comprised of forty five species distributed as follows:

Family **PENAEIDAE** RAFINESQUE, 1815

*Sicyonia carinata* (BRÜNNICH, 1768)

Family **HIPPOLYTIDAE** BATE, 1888

*Thorulus cranchii* (LEACH, 1817)

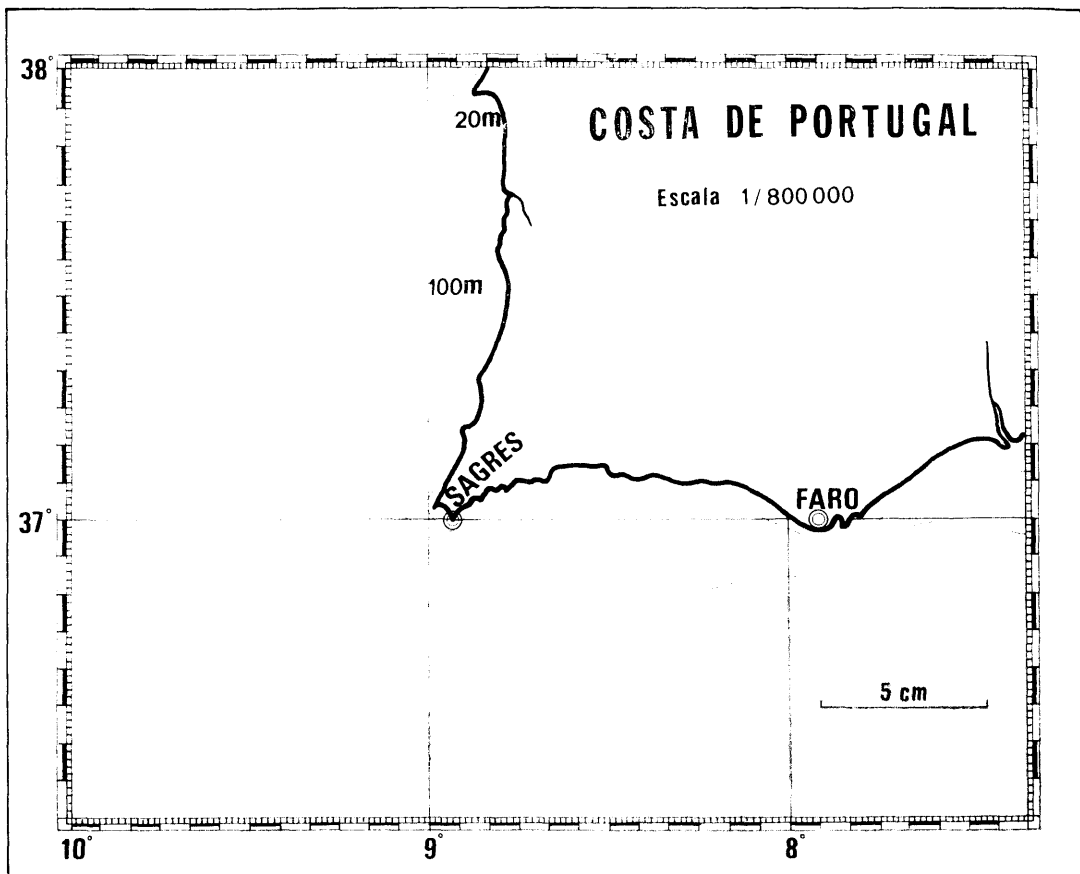
Family **ALPHEIDAE** RAFINESQUE, 1815

*Athanas nitescens* (LEACH, 1814)

*Synalpheus gambarelloides* (NARDO, 1847)

*Alpheus macrocheles* (HAILSTONE, 1835)

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Family **PROCESSIDAE** ORTMANN, 1806

*Processa edulis crassipes* NOUVEL & HOLTHUIS

Family **PALAEMONIDAE** RAFINESQUE, 1815

*Periclimenes sagittifer* (NORMAN, 1861)

Family **CRANGONIDAE** WHITE, 1847

*Pontophilus fasciatus* (RISSE, 1816)

Family **SCYLLARIDAE** LATREILLE, 1825

*Scyllarus arctus* (LINNAEUS, 1758)

- Family **CALLIANASSIDAE** DANA, 1852  
*Upogebia deltaura* (LEACH, 1815)
- Family **PAGURIDAE** LATREILLE, 1803  
*Pagurus anachoretus* RISSO, 1827
- Family **GALATHEIDAE** SAMOUELLE, 1819  
*Galathea intermedia* LILLJEBORG, 1851
- Family **PORCELLANIDAE** HAWORTH, 1825  
*Porcellana platycheles* (PENNANT, 1777)  
*Pisidia longimana* (RISSO, 1816)  
*Pisidia longicornis* (LINNAEUS, 1767)
- Family **DROMIDAE** DE HAAN, 1833  
*Dromia personata* (LINNAEUS, 1759)
- Family **HOMOLIDAE** DE HAAN, 1839  
*Homola barbata* (FABRICIUS, 1793)
- Family **DORIPPIDAE** MACLEAY, 1838  
*Ethusa mascarone* (HERBST, 1785)
- Family **LEUCOSIIDAE** SAMOUELLE, 1819  
*Ebalia tuberosa* (PENNANT, 1777)  
*Ebalia edwardsi* COSTA, 1838
- Family **ATELECYCLIDAE** ORTMANN, 1893  
*Atelecyclus rotundatus* (OLIVI, 1792)
- Family **THIIDAE** DANA, 1852  
*Thia scutellata* (FABRICIUS, 1793)
- Family **PRIMELIDAE** ALCOCK, 1899  
*Pirimela denticulata* (MONTAGU, 1808)  
*Sirpus zariquiey* GORDON, 1953

Family **CORYSTIDAE** SAMOUELLE, 1819

*Corystes cassivelaunus* (PENNANT, 1777)

Family **PORTUNIDAE** RAFINESQUE, 1815

*Necora puber* (LINNAEUS, 1767)

*Liocarcinus arcuatus* (LEACH, 1814)

*Liocarcinus corrugatus* (PENNANT, 1777)

*Liocarcinus marmoreus* (LEACH, 1814)

*Liocarcinus vernalis* (RISSO, 1816)

Family **XANTHIDAE** MACLEAY, 1838

*Pilumnus spinifer* H. MILNE EDWARDS, 1834

*Pilumnus hirtellus* (LINNAEUS, 1761)

*Eriphia verrucosa* (FORSKÅL, 1775)

*Xantho pilipes* A. MILNE EDWARDS, 1867

*Xantho incisus* (LEACH, 1814)

Family **PINNOTHERIDAE** DE HAAN, 1833

*Pinnotheres pisum* (LINNAEUS, 1767)

Family **PARTHENOPIIDAE** MACLEAY, 1838

*Parthenope massena* (ROUX, 1830)

Family **MAJIDAE** SAMOUELLE, 1819

*Pisa tetraodon* (PENNANT, 1777)

*Pisa nodipes* (LEACH, 1815)

*Eurynome aspera* (PENNANT, 1777)

*Inachus phalangium* (FABRICIUS, 1775)

*Achaeus gracilis* O.G. COSTA, 1839

*Macropodia rostrata* (LINNAEUS, 1761)

*Macropodia linaresi* FOREST & ZARIQUEY ALVAREZ, 1964

*Macropodia longirostris* (FABRICIUS, 1775)

For each one of the species studied is indicated the bibliography (restricted) used in its determination, with special emphasis on the works referring material from the Eastern Atlantic, the number of the males and females (ovigerous and non-ovigerous), the maximum measurements of the specimens

(length or length and width), distribution in Portugal and general distribution as well as other comments where appropriate.

Some of the species are also described in more or less detail, particularly those mentioned for the first time off the Portuguese coast and the species of *Macropodia* which, until the publication of the studies of FOREST & ZARIQUIEY ALVAREZ (1964) and FOREST (1978) were frequently incorrectly identified. The latter descriptions were based on those given by the authors mentioned above, but always mentioning the differences noticed in our own specimens.

In spite of the limited number of specimens and species, this collection is particularly interesting because among the species studied, *Pisidia longimana*, *Sirpus zariquiey*, *Achaeus gracilis* and *Macropodia rostrata* until now considered as inhabiting exclusively the Mediterranean, are cited for the first time for Portugal and, consequently, for the Eastern Atlantic, fact which enlarges considerably their Western distribution area. *Ebalia edwardsi*, known from the Mediterranean is also cited for the first time off the Portuguese coast. Nevertheless, this species is already known from the Eastern Atlantic by two records mentioned by ZARIQUIEY ALVAREZ (1968).

In addition to this, we also consider as new to Portugal, *Pontophilus fasciatus* and *Pilumnus spinifer*, previously cited by NOBRE (1931, 1936) but whose descriptions are too ambiguous to be considered valid since they can refer as much to one species as to another of the same genus.

The specimens that were too damaged were not included in this study because their specific identification became impossible.

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We thank Professor CARLOS ALMAÇA for all support he gave us during the course of this study. We also thank Mrs. MARIA TERESA LOPES for drawing the map.

Family **PENAEIDAE** RAFINESQUE, 1815Genus **Sicyonia** H. MILNE EDWARDS, 1830**Sicyonia carinata** (BRÜNNICH, 1768)

*Sicyonia sculpta* NOBRE, 1936, pp. 185-186, fig. 8, pl. 60.

*Sicyonia carinata* ZARIQUIEY ALVAREZ, 1968, pp. 57-58, fig. 28; NEVES, 1973, p. 81.

MATERIAL EXAMINED: One single male with 26.0 mm of total length not including the rostrum.

DISTRIBUTION IN PORTUGAL: This species has been recorded only in the South coast of the country (Faro, Olhão *in* NOBRE, 1936 and NEVES, 1973).

GENERAL DISTRIBUTION: Eastern Atlantic, from the Portuguese coast to West Africa. Also from the Mediterranean and the Adriatic. Littoral to about 3-4 m.

Family **HIPPOLYTIDAE** BATE, 1888Genus **Thoralus** HOLTHUIS, 1947**Thoralus cranchii** (LEACH, 1817)

*Thoralus cranchii* ZARIQUIEY ALVAREZ, 1968, p. 125, figs. 5, a, b, 49, d 51, a, 52, c, d; NEVES, 1973, p. 87; NEVES, 1975, pp. 7-9, fig. 4, a, b; NEVES, 1987, pp. 239-240.

MATERIAL EXAMINED: Three ovigerous females, the largest with a total length of 13.0 mm.

DISTRIBUTION IN PORTUGAL: In earlier studies (NEVES, 1973 and 1975) we were able to verify that the oldest references to this species for Portugal, namely that mentioned by OSÓRIO (1889 as *Hippolyte cranchii*) from Cascais, was in fact *Hippolyte varians* LEACH. In the same way, the description given by NOBRE (1931, 1936) for *T. cranchii* is too much ambiguous as it can be applied to other taxa such as *Thoralus sollaudi* (ZARIQUIEY CENARRO, 1935) or *Eualus occultus* (LEBOUR, 1936). The same can be affirmed for the illustrations accompanying these descriptions (NOBRE, *op. cit.*). Thus, we only consider valid for the Portuguese coast the following references to this species: Cabo-Espichel — Portinho da Arrábida (SALDANHA, 1974), Portinho da

Arrábida (NEVES, 1973), Setúbal and Costa da Galé (NEVES, 1973, 1975, 1987). With the exception of SALDANHA's (*op. cit.*) reference, all the remaining samples were reviewed and studied by us. The presence of this species in Sagres enlarges considerably its southern distribution area along the Portuguese coast.

GENERAL DISTRIBUTION: Eastern Atlantic, from Norway southward to the Gulf of Guinea. It occurs also in the Mediterranean. From shore to about 40 m.

Family **ALPHEIDAE** RAFINESQUE, 1815

Genus **Athanas** LEACH, 1814

**Athanas nitescens** (LEACH, 1814)

*Athanas nitescens* NOBRE, 1936, p. 173, pl. 60, fig. 11; ZARIQUIEY ALVAREZ, 1968, pp. 137-140, figs. 3, d, 59, a, 60; NEVES, 1973, p. 90; NEVES, 1987, p. 240.

MATERIAL EXAMINED: One single female with 12.5 mm of total length.

DISTRIBUTION IN PORTUGAL: This species occurs along all the Portuguese coast, from Viana do Castelo in the North and southward to Faro (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from the South coast of Norway to the Cape Verde Islands. It has also been recorded in West Africa, from Senegal to the Congo, in the Mediterranean and in the Black Sea. Intertidal.

Genus **Synalpheus** BATE, 1888

**Synalpheus gambarelloides** (NARDO, 1847)

*Synalpheus gambarelloides* ZARIQUIEY ALVAREZ, 1968, pp. 141-143, figs. 2, a, 61, 62; NEVES, 1973, p. 90; NEVES, 1975, p. 10, fig. 5.

MATERIAL EXAMINED: Two males, the largest with 14.9 mm of total length.

DISTRIBUTION IN PORTUGAL: The species was first reported to Portugal by NEVES (1973) based on material collected in Setúbal. Therefore, this is the second time that *S. gambarelloides* is collected off the Portuguese coast.

GENERAL DISTRIBUTION: Eastern Atlantic, coast of Portugal. Mediterranean and Adriatic. Littoral and sublittoral to about 60 m.



Genus **Alpheus** FABRICIUS, 1798**Alpheus macrocheles** (HAILSTONE, 1835)

*Alpheus macrocheles* NOBRE, 1936, pp. 170-171, pl. 60, figs. 5, 6; ZARIQUIEY ALVAREZ, 1968, pp. 144-145, figs. 2, b, 3, c; NEVES, 1973, p. 90; NEVES, 1987, p. 241.

MATERIAL EXAMINED: One single female with 31.0 mm of total length.

DISTRIBUTION IN PORTUGAL: The species has been reported from Buarcos, in the North coast, to Ria de Faro in the South (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from the South of the British Islands to Angola. It also occurs in the Mediterranean and has been reported from the Antilles. Littoral to 185 m (Cape Verde Islands *in* CROSNIER & FOREST, 1966).

Family **PROCESSIDAE** ORTMANN, 1806Genus **Processa** LEACH, 1815**Processa edulis crassipes** NOUVEL & HOLTHUIS, 1957

*Processa edulis crassipes* NOUVEL & HOLTHUIS, 1957, pp. 6, 9, 16-17, figs. 28-37; ZARIQUIEY ALVAREZ, 1968, pp. 152, 153, fig. 65, h; NEVES, 1973, pp. 92-93.

MATERIAL EXAMINED: One ovigerous female with a total length of 28.5 mm.

DISTRIBUTION IN PORTUGAL: *P. edulis crassipes* has been reported from Viana do Castelo, Setúbal and Arrábida (NEVES, 1973). This is the first time that the species is recorded from the South coast of the country.

GENERAL DISTRIBUTION: Eastern Atlantic, from the British Islands to the Portuguese coast. Normally occurs inshore or even intertidally but may also occur to 20 m.

Family **PALAEMONIDAE** RAFINESQUE, 1815

Genus **Periclimenes** COSTA, 1844

**Periclimenes sagittifer** (NORMAN, 1861)

*Periclimenes sagittifer* ZARIQUIEY ALVAREZ, 1968, pp. 179, 181-182;  
NEVES, 1975, pp. 17-19, fig. 6, a.

MATERIAL EXAMINED: One ovigerous female with 29.5 mm of total length, including the rostrum.

DISTRIBUTION IN PORTUGAL: Until now, *P. sagittifer* was known in Portugal from two specimens collected in Setúbal (see NEVES, 1975). Therefore, this is the second time the species is reported from the Portuguese coast.

GENERAL DISTRIBUTION: Eastern Atlantic, along the Portuguese coast, Mediterranean, Spanish and French coasts. Littoral to about 6 m.

Family **CRANGONIDAE** WHITE, 1847

Genus **Pontophilus** LEACH, 1817

**Pontophilus fasciatus** (RISSO, 1816)

*Philocheras fasciatus* ZARIQUIEY ALVAREZ, 1968, pp. 194-195, fig. 82, h.  
*Pontophilus fasciatus* SMALDON, 1979, pp. 100,108, fig. 47.

MATERIAL EXAMINED: Three ovigerous females, the largest with a total length of 13.2 mm.

DISTRIBUTION IN PORTUGAL: The species is recorded in Portugal (no specific locality) by NOBRE (1936 as *Aegeon fasciatus* = *Crangon fasciatus*). However, the description given by NOBRE (*op. cit.*) is too ambiguous being impossible to affirm if the author was referring to *P. fasciatus* proper or to a similar species. In this case, we consider as valid only the material collected in Sagres.

GENERAL DISTRIBUTION: Eastern Atlantic, ranging from the coasts of Iceland to Portugal and the Azores. Also in the Mediterranean and the Adriatic. Lower intertidal to about 60 m

## Family SCYLLARIDAE LATREILLE, 1825

Genus *Scyllarus* FABRICIUS, 1775*Scyllarus arctus* (LINNAEUS, 1758)

*Scyllarus arctus* NOBRE, 1936, pp. 156-157, pl. 54, fig. 133; ZARIQUIEY ALVAREZ, 1968, pp. 218-221, figs. 86, c. 87, a. b; NEVES, 1974, pp. 11-12; NEVES, 1987, pp. 254-255.

MATERIAL EXAMINED: Two females with a maximum length of 45.5 mm.

DISTRIBUTION IN PORTUGAL: This species is known along all the Portuguese coast, from Âncora in the North coast to Olhão in the South (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from the British Islands to the coast of Mauritania, including the Azores and Madeira. Mediterranean and Adriatic. Littoral to about 50 m.

## Family CALLIANASSIDAE DANA, 1852

Genus *Upogebia* LEACH, 1814*Upogebia deltaura* (LEACH, 1815)

*Upogebia deltaura* ZARIQUIEY ALVAREZ, 1968, pp. 230, 231; NEVES, 1974, pp. 14-15.

MATERIAL EXAMINED: Three males with a maximum length of 58.0 mm; three females, the largest with 55.5 mm of total length.

DISTRIBUTION IN PORTUGAL: This is the third time the species is reported from the Portuguese coast, the previous ones being from Figueira da Foz (BOLÍVAR as *Gebia deltaura*) and Ria de Faro (NEVES, 1974).

GENERAL DISTRIBUTION: Eastern Atlantic, from the coast of Norway to Portugal. Also occurs in the Mediterranean and in the Adriatic. Between 20 and 40 m.

Family **PAGURIDAE** LATREILLE, 1803

Genus **Pagurus** FABRICIUS, 1775

**Pagurus anachoretus** RISSO, 1827

*Eupagurus anachoretus* NOBRE, 1936, pp. 138-139, pl. 46, fig. 117; ZARIQUIEY ALVAREZ, 1968, pp. 245, 249, figs. 12, e, 89, i, 90, g, k, 91, g.

MATERIAL EXAMINED: One single male with a cephalothorax with a length of 8.1 mm.

DISTRIBUTION IN PORTUGAL: The species is known from Setúbal, Milfontes, Sines, Portimão, Faro and Olhão (*see* NOBRE, 1936 as *Eupagurus anachoretus*).

GENERAL DISTRIBUTION: Eastern Atlantic, off the Portuguese coast. Also in the Mediterranean, to Egypt and Israel. Normally occurs between 6 to 10 m but has been recorded from 100 m.

Family **GALATHEIDAE** SAMOUELLE, 1819

Genus **Galathea** FABRICIUS, 1773

**Galathea intermedia** LILLJEBORG, 1851

*Galathea intermedia* VILELA, 1936, p. 227; NUNES-RUIVO, 1961, pp. 6-7; ZARIQUIEY ALVAREZ, 1968, pp. 172, 279-280, figs. 97, c, 98, c, f, g, 99, b, 100, b; NEVES, 1977, p. 191-192.

MATERIAL EXAMINED: One single female with a cephalothorax with a length of 8.9 mm including the rostrum.

DISTRIBUTION IN PORTUGAL: The species is very common along all the Portuguese coast and has been recorded from Buarcos in the North coast to the Algarve in the South (*see* NEVES, 1977).

GENERAL DISTRIBUTION: Eastern Atlantic, from the coast of Norway to Senegal. Mediterranean, from Spain to Israel and also in the Adriatic. Sublittoral to about 50 m. BOUVIER (1940) recorded it from 225 m deep.

Family **PORCELLANIDAE** HAWORTH, 1825Genus **Porcellana** LAMARCK, 1801**Porcellana platycheles** (PENNANT, 1777)

*Porcellana platycheles* NOBRE, 1936, p. 118, pl. 40, figs. 99, 100; ZARIQUIEY ALVAREZ, 1968, pp. 289, 290, fig. 94, c; NEVES, 1975, p. 23; NEVES, 1977, pp. 197-199.

MATERIAL EXAMINED: Ten males, the largest with a length of 9.2 mm; five females (three ovigerous females) with a maximum length of 8.5 mm (non-ovigerous).

DISTRIBUTION IN PORTUGAL: The species is very common along all the Portuguese coast, from Âncora in the North to Olhão in the South (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic from the Shetland Islands and the coast of Holland to the Canary Islands and Mauritania. Also in the Mediterranean. Shallow-water, intertidal.

Genus **Pisidia** LEACH, 1820**Pisidia longimana** (RISSO, 1816)

*Pisidia longimana* HOLTHUIS, 1961, pp. 40-43, figs. 12, b, e, 13, b; ZARIQUIEY ALVAREZ, 1968, pp. 292-293, fig. 103, b.

MATERIAL EXAMINED: One single female with a total length of 3.0 mm. The specimen shows a distinct spine on the inner margin of the ischium of the chelipeds and the merus bears a strong spine, well developed, in the middle of the lower part of its distal margin. This characteristic is not present even in small specimens of *P. longicornis* (this last species and *P. longimana* show a close resemblance) proving to be excellent to distinguish the two species.

DISTRIBUTION IN PORTUGAL: The species is new to the Portuguese coast.

GENERAL DISTRIBUTION: As *P. longimana* has been for a long time synonymized with *P. longicornis*, it becomes very difficult to establish correctly the distribution area of the species. Therefore, only the localities mentioned by HOLTHUIS (1961, *op. cit.*) and ZARIQUIEY ALVAREZ (1968) are mentioned: Mediterranean, coast of Melilla, Catalan and the French coasts (Banyuls).

Colliure. Port Vendres, Nice), Gulf of Naples, Israel, Turkey and the Black Sea. Until now, *P. longimana* was not known outside the Mediterranean. Its presence in Sagres enlarges considerably the distribution area of the species. *P. longimana* usually lives in shallow-water, intertidal.

***Pisidia longicornis* (LINNAEUS, 1767)**

*Pisidia longicornis* HOLTHUIS, 1961, pp. 37-38, figs. 12, c, f, 13, c; ZARIQUIEY ALVAREZ, 1968, pp. 291, 293, figs. 94, b, 103, c, d; NEVES, 1977, pp. 199-201, fig. 12, D.

MATERIAL EXAMINED: One hundred and twenty two males having carapaces up to 7.7 mm long; sixty eight females, the largest with a carapace length of 6.9 mm.

DISTRIBUTION IN PORTUGAL: The species is very common along all the Portuguese littoral, from Póvoa do Varzim in the North to Olhão in the South (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from the Southwest coast of Norway to Angola including the Canary Islands. Occurs also in the Mediterranean. Intertidal to about 100 m deep.

Family **DROMIDAE** DE HAAN, 1833

Genus **Dromia** WEBER, 1795

***Dromia personata* (LINNAEUS, 1795)**

*Dromia vulgaris* NOBRE, 1936, pp. 19-20, pl. 7, fig. 12.

*Dromia personata* ZARIQUIEY ALVAREZ, 1968, pp. 298-230, figs. 1, c, 15, d, 106, a.

MATERIAL EXAMINED: The single female observed has a carapace length of 13.0 mm.

DISTRIBUTION IN PORTUGAL: Setúbal (OSÓRIO, 1905 and NOBRE, 1936 as *D. vulgaris*). Therefore, Sagres is the second locality of the coast where the species was captured.

GENERAL DISTRIBUTION: Eastern Atlantic, from the West coast of the British Islands to São Tomé in the West African coast. Also in the Mediterranean. Usually between 10 to 30 m, but according to BOUVIER (1940) occurs up to 100 m.

Family **HOMOLIDAE** DE HAAN, 1839Genus **Homola** LEACH, 1815**Homola barbata** (FABRICIUS, 1793)

*Homola barbata* NOBRE, 1936, pp. 18-19, pl. 6, fig. 10; ZARIQUIEY ALVAREZ, 1968, pp. 304-306, figs. 12, g, 106, c; MANNING & HOLTHUIS, 1981, pp. 25-27.

MATERIAL EXAMINED: One single female with a carapace length of 28.5 mm.

DISTRIBUTION IN PORTUGAL: The species is known from Cascais, northern Lisbon (VILELA, 1936), to the Algarve in the South coast.

GENERAL DISTRIBUTION: Eastern Atlantic, from Portugal to South Africa including the Azores, the Cape Verde Islands and Madeira. In the Western Atlantic it has been recorded between Massachusetts and Brazil. It is also known in the Mediterranean. It inhabits depths between 10-30 m and 679 m.

Family **DORIPPIDAE** MACLEAY, 1838Genus **Ethusa** ROUX, 1830**Ethusa mascarone** (HERBST, 1785)

*Ethusa mascarone* NOBRE, 1936, pp. 71-72, pl. 38, fig. 138; ZARIQUIEY ALVAREZ, 1968, pp. 309-311, fig. 107, b, c; MANNING & HOLTHUIS, 1981, pp. 41, 42, fig. 6, d, e, f, fig. 7, c, d.

MATERIAL EXAMINED: Three males, the largest with a carapace length of 7.2 mm.

DISTRIBUTION IN PORTUGAL: The species has been recorded in Setúbal (NOBRE, 1936) and Algarve (VILELA, 1936).

GENERAL DISTRIBUTION: Until the publication of MANNING & HOLTHUIS (1981) about the West African Brachyuran crabs, *E. mascarone* was recorded in the Eastern Atlantic from the Bay of Biscay to the Congo and also from the entire Mediterranean, being cited as well from the Antilles, California and the Hawaii Islands (see ZARIQUIEY ALVAREZ, 1968). However those authors describe a new species, *E. vossi* which closely resembles *E. mascarone*

from the Mediterranean and adjacent Atlantic, the two species being distinguishable by several important characters. As a result of this fact, besides the West African records of *E. mascarone* mentioned by those authors and assigned to *E. vossi*, other records of the first species outside the Mediterranean and adjacent Atlantic will have to be reexamined to determine which of the species is involved (see *op. cit.*). Only afterwards will it be possible to establish with precision the distribution area of *E. mascarone*. Sublittoral, from 5 to 75 mm.

Family **LEUCOSIDAE** SAMOUELLE, 1819

Genus **Ebalia** LEACH, 1917

**Ebalia tuberosa** (PENNANT, 1777)

*Ebalia Pennanti* NOBRE, 1936, pp. 76-78, pl. 26, fig. 65, pl. 27, fig. 70.  
*Ebalia tuberosa* NUNES-RUIVO, 1961, pp. 17-18; ZARIQUIEY ALVAREZ, 1968, pp. 325, 326-328, figs. 109, d, 110, a-c, 111, a; INGLE, 1980, pp. 38, 84, figs. 10, 17, 22, pl. 3, a.

**MATERIAL EXAMINED:** Three males, the largest with a carapace length of 11.5 mm and a width of 12.8 mm; one female with 13.2 and 14.5 mm respectively for the length and the width of the carapace.

**DISTRIBUTION IN PORTUGAL:** The species is well known along the Portuguese coast and has been recorded from Cascais (38° 40'. 8 N and 09° 26'. 2 W in NUNES-RUIVO, 1961) to Baleeira-Quarteira in the South coast (Algarve).

**GENERAL DISTRIBUTION:** In the Eastern Atlantic, from the coast of Norway and Hebrides to Mauritania (?) including the Azores and the Canary Islands (see MANNING & HOLTHUIS, 1981). Also in the Mediterranean. Intertidal to about 170 m (see NUNES-RUIVO, 1961).

**Ebalia edwardsi** COSTA, 1838

*Ebalia edwardsi* ZARIQUIEY ALVAREZ, 1968, pp. 326, 337-338, figs. 109, a, b, 111, f, 111 C, 111, D, a.

**MATERIAL EXAMINED:** One male with a carapace length of 8.8 mm and a width of 10.6 mm; two females, the largest with a length of 9.0 mm and a width of 11.2 mm.



This species can be easily identified once it shows a carapace distinctly wider than long. This character found in males as in females is not so evident in the other European species of *Ebalia*.

DISTRIBUTION IN PORTUGAL: As far as we know *Ebalia edwardsi* is new for the Portuguese coast.

GENERAL DISTRIBUTION: Mediterranean. Nevertheless, two records out of the Mediterranean are also cited by ZARIQUIEY ALVAREZ (1968): one female found at 32° 30' N and 18° 51' W (100 m deep) and one male found at 28° 29' N and 18° 27' W (190 m deep). Littoral and sublittoral to about 190 m.

Family **ATELECYCLIDAE** ORTMANN, 1893

Genus **Atelecyclus** LEACH, 1814

**Atelecyclus rotundatus** (OLIVI, 1792)

*Atelecyclus heterodon* NOBRE, 1936, pp. 25-26, pl. 8, fig. 14.

*Atelecyclus rotundatus* ZARIQUIEY ALVAREZ, 1968, pp. 342, figs. 1, d, 112, b; INGLE, 1980, pp. 43, 103-104, pl. 14, a, fig. 46.

MATERIAL EXAMINED: One single female with a carapace length of 20.5 mm and a width of 20.2 mm.

DISTRIBUTION IN PORTUGAL: *A. rotundatus* can be found along all the Portuguese coast, from Matosinhos in the North coast to Baleeira-Quarteira in the South (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from Scandinavia and the Hebrides to South Africa, including the Cape Verde Islands. Littoral to about 300 m.

Family **THIIDAE** DANA, 1852

Genus **Thia** LEACH, 1815

**Thia scutellata** (FABRICIUS, 1793)

*Thia polita* NOBRE, 1936, p. 23, pl. 7, fig. 13.

*Thia residua* NUNES-RUIVO, 1961, pp. 22-23.

*Thia scutellata* ZARIQUIEY ALVAREZ, 1968, pp. 343-344, fig. 111, F.

MATERIAL EXAMINED: Four females, the largest with a carapace length of 14.0 mm and a width of 16.2 mm.

DISTRIBUTION IN PORTUGAL: The species is known from Setúbal, to the South coast (Algarve). As far as we know, *T. scutellata* has not yet been recorded in the North coast of the country.

GENERAL DISTRIBUTION: Eastern Atlantic, from Sweden and the British Islands southward to Portugal, Sierra Leone and São Tomé in the Gulf of Guinea. Also occurs in the Mediterranean. In depths between 10 and 25 m (MANNING & HOLTHUIS, 1981).

Family **PIRIMELIDAE** ALCOCK, 1899

Genus **Pirimela** LEACH, 1816

**Pirimela denticulata** (MONTAGU, 1808)

*Pirimela denticulata* NOBRE, 1936, p. 51, pl. 16, fig. 32; ALMAÇA, 1962, pp. 166-169, figs. 1-2; ZARIQUIEY ALVAREZ, 1968, pp. 348-350, figs. 7, a, 11, d, 112, a, 113, a.

MATERIAL EXAMINED: Three males, the largest with a carapace length of 7.6 mm and a width of 8.9 mm.

DISTRIBUTION IN PORTUGAL: Records are known along all the Portuguese coast, from Póvoa do Varzim in the North to the South coast (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from Norway to Senegal. Also occurs in the Mediterranean. Intertidal to about 50 m.

Genus **Sirpus** GORDON

**Sirpus zariquiey** GORDON, 1953

*Sirpus zariquiey* ZARIQUIEY ALVAREZ, 1968, pp. 350-351, figs. 112, c, 113, b.

MATERIAL EXAMINED: One single male with a carapace length of 5.2 mm.

DESCRIPTION: The specimen observed shows the following characters: carapace slightly broader than long, approximately hexagonal. Frontal region presenting three sharp teeth fused only in the basal portion, the median one being distinctly shorter than the two lateral and not situated on the same plane. Dorsal orbital margin straight and terminating in a distinct incision. Lateral margin of the carapace with four sharply pointed teeth, including

the postorbital, the third one being shorter. Chelipeds approximately of the same size, the propodus and the carpus presenting strong tubercles. Abdomen with the third, the fourth and the fifth somites fused. In the female, not observed by us, the six somites of the abdomen are free.

DISTRIBUTION IN PORTUGAL: *Sirpus zariquiey* is new to the Portuguese coast.

GENERAL DISTRIBUTION: Until now, the species was known only in the Mediterranean where it is widely distributed, from Spain to Israel and Turkey. It has also been recorded in the Sea of Marmara and the Black Sea. LEWIN-SOHN & HOLTHUIS (1986) reported it from Cyprus.

The presence of *S. zariquiey* in Sagres (Eastern Atlantic) enlarges considerably its western distribution area. The two other species of the genus *Sirpus*, *S. monodi* GORDON, 1953 and *S. gordonae* MANNING & HOLTHUIS, 1981 have been recorded the first one from NW Africa, from Mauritania to Senegal, in depths between 0 and 12 m, the second one from Annobon in the Gulf of Guinea where it has been taken at a sandy beach in a rocky cove (see MANNING & HOLTHUIS, 1981). *Sirpus zariquiey* has been found in depths between 1 to about 40 m.

#### Family **CORYSTIDAE** SAMOUELLE, 1819

#### Genus **Corystes** LATREILLE, 1803

#### **Corystes cassivelaunus** (PENNANT, 1777)

*Corystes cassivelaunus* NOBRE, 1936, p. 22, pl. 9, fig. 16.

*Corystes cassivelaunus* ZARIQUIEY ALVAREZ, 1968, pp. 339-340, fig. 112, c.

MATERIAL EXAMINED: One single male with a carapace length of 31.2 mm: one female with a carapace length of 14.2 mm.

DISTRIBUTION IN PORTUGAL: The species is known from all the Portuguese coast.

GENERAL DISTRIBUTION: Eastern Atlantic, from Norway and Sweden to Gibraltar and the Mediterranean. In depths between 7 and 90 m (MANNING & HOLTHUIS, 1981).

Family **PORTUNIDAE** RAFINESQUE, 1815

Genus **Necora** HOLTHUIS, 1987

**Necora puber** (LINNAEUS, 1767)

*Portunus puber* NOBRE, 1936, p. 32, pl. 10, fig. 18.

*Macropipus puber* ZARIQUIEY ALVAREZ, 1968, pp. 367, 370-372, figs. 117,

118, a, b, 120, d, 122, e, 123, b, 124, b: NEVES, 1975, pp. 28-30, fig. 8.

*Liocarcinus puber* INGLE, 1980, pp. 41, 91-93, figs. 23, 28, 29, 35, pl. 8, a.

*Necora puber* HOLTHUIS, 1987, pp. 8-12, fig. 1.

MATERIAL EXAMINED: The two juvenile males observed have carapace lengths of 11.0 and 9.0 corresponding to carapace widths of 12.2 and 10.5 mm.

DISTRIBUTION IN PORTUGAL: *Necora puber* has been recorded along all the Portuguese coast.

GENERAL DISTRIBUTION: Eastern Atlantic, from the coast of Norway to the Spanish Sahara. Also found in the Mediterranean. Littoral to about 70 m.

Genus **Liocarcinus** STIMPSON, 1871

**Liocarcinus arcuatus** (LEACH, 1814)

*Portunus arcuatus* NOBRE, 1936, p. 36, pl. 13, fig. 25

*Macropipus arcuatus* ZARIQUIEY ALVAREZ, 1968, pp. 367, 369-370, figs. 116,

d-h, 120, a, 112, c, 123, a: NEVES, 1975, p. 27, fig. 7.

*Liocarcinus arcuatus* INGLE, 1980, pp. 41, 93-94, fig. 34, pl. 8, b.

MATERIAL EXAMINED: One single male with a carapace length of 7.0 mm and a width of 9.5 mm.

DISTRIBUTION IN PORTUGAL: The species has been reported from Malhada (38° 16'.0 N and 08° 47'.7 W in NUNES-RUIVO, 1961 as *Macropipus arcuatus*) southward to Algarve.

GENERAL DISTRIBUTION: Eastern Atlantic, from the North Sea and the British Islands southward to Mauritania. Also in the Mediterranean (MANNING & HOLTHUIS, 1981). Usually between 10 to 50 m deep but it has been reported from 108 m (see *op. cit.*)

**Liocarcinus corrugatus** (PENNANT, 1777)

*Portunus corrugatus* NOBRE, 1936, p. 34, pl. 12, fig. 21.

*Macropipus corrugatus* ZARIQUIEY ALVAREZ, 1968, pp. 367, 372, figs. 13, e, 118, c-e, 120, c, 122, d, 123, e, 124, c.

*Liocarcinus corrugatus* INGLE, 1980, pp. 41, 94-95, fig. 36, pl. 9, a.

MATERIAL EXAMINED: One single female with a carapace length of 26.0 mm and a width of 30.2 mm.

DISTRIBUTION IN PORTUGAL: *Liocarcinus corrugatus* has been reported from northern Lisbon (Cascais, VILELA, 1936 as *Portunus corrugatus*) to the South coast (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from the British Islands southward to Senegal and Angola, including the Canary Islands and the Cape Verde Islands. Mediterranean. It has also been reported in the Indo-West Pacific (STEPHENSON, 1972 in MANNING & HOLTHUIS, 1981). Littoral to about 70 m (LEWINSOHN & HOLTHUIS, 1986).

**Liocarcinus marmoreus** (LEACH, 1814)

*Macropipus marmoreus* NUNES-RUIVO, 1961, pp. 25-26; ZARIQUIEY ALVAREZ, 1968, pp. 368, 377.

*Liocarcinus marmoreus* INGLE, 1980, pp. 42, 98-99, fig. 41, pl. 11, b; UDEKEM D'ACUZ, 1988, p. 187, fig. 15.

MATERIAL EXAMINED: One single male with a carapace length of 28.0 mm and a width of 28.2 mm.

DISTRIBUTION IN PORTUGAL: Considering that in the past *L. marmoreus* has been often confused with other species of the genus, namely *L. holsatus* and *L. vernalis*, the older Portuguese records referred to *L. marmoreus* should be carefully reexamined to establish undoubtedly its correct systematic status. NUNES-RUIVO (1961) reported the species from Cape Espichel (38° 24' N and 09° 13' 8 W as *Macropipus marmoreus*) pointing out that most of the specimens preserved at Museu Bocage labelled as *L. marmoreus* correspond, in fact, to *L. holsatus* (see *op. cit.*). More recently, UDEKEM D'ACUZ (1988) reported the species from the Algarve (Sagres).

GENERAL DISTRIBUTION: Eastern Atlantic, from the British Islands and the North Sea southward to Spain and Portugal, the Azores and Madeira.

The species is also cited from the Mediterranean coast of Spain (GARCIA RASO, 1984 and GARCIA RASO *et al.*, 1987). Shallow water to about 85 m.

**Liocarcinus vernalis** (Risso, 1816)

*Macropipus vernalis* ZARIQUIEY ALVAREZ, 1968, pp. 369, 377-379, figs. 119, c. d, 121, c, 122, f, 123, f, 124, f; NEVES, 1975, pp. 31-35, fig. 10.  
*Liocarcinus vernalis* UDEKEM D'ACÓZ, 1988, pp. 184, 187, figs. 16, 17.

MATERIAL EXAMINED: Eight males having carapaces up to 10.0 mm long and 20.5 mm large; nine females, the largest with a carapace length of 15.2 mm and a width of 20.1 mm.

DISTRIBUTION IN PORTUGAL: The species has been reported from Setúbal, (NEVES, 1975 as *Macropipus vernalis*) and from Algarve (UDEKEM D'ACÓZ, 1988).

GENERAL DISTRIBUTION: Eastern Atlantic, from the northeast coast of Brittany southward to Mauritania (UDEKEM D'ACÓZ *op. cit.*). *Liocarcinus vernalis* also occurs throughout the Mediterranean (LEWINSOHN & HOI-THUIS, 1986). Shallow water to about 20 m.

Family **XANTHIDAE** MACLEAY, 1838

Genus **Pilumnus** LEACH, 1815

**Pilumnus spinifer** H. MILNE EDWARDS, 1834

*Pilumnus spinifer* ZARIQUIEY ALVAREZ, 1968, pp. 391-392, fig. 129. a-c.

MATERIAL EXAMINED: Two males, the largest with a carapace length of 12.0 mm and a carapace width of 15.0 mm; one female with a carapace length of 10.5 mm and a width of 13.2 mm; one ovigerous female with a carapace length of 11.5 mm and a width of 13.3 mm.

DISTRIBUTION IN PORTUGAL: The species has been reported from the Portuguese coast by several authors (see NOBRE, 1936). However, considering that in the past the species of this genus have been often confused, a fact well demonstrated through the ambiguous descriptions given by NOBRE (*op. cit.*) we consider as dubious the older records of this species in Portugal. Therefore, Sagres is the first local of the Portuguese coast where the presence of the species can be confirmed.

GENERAL DISTRIBUTION: Eastern Atlantic, from Sweden to the NW coast of Africa and Mauritania, including the Azores. Known in the entire Mediterranean. Sublittoral to about 100 m.

***Pilumnus hirtellus* (LINNAEUS, 1761)**

*Pilumnus hirtellus* NUNES-NUNES RUIVO, 1961, p. 26; ZARIQUIEY ALVAREZ, 1968, pp. 391, 392, figs. 2, g, 128, c, d, 129, f.

MATERIAL EXAMINED: Fifty five males with a maximum carapace length of 12.2 mm and a maximum carapace width of 16.2 mm; forty four females, the largest with a carapace length of 13.0 mm and a carapace width of 17.2 mm.

DISTRIBUTION IN PORTUGAL: This species is well known along the entire coast and has been reported from Âncora in the North coast to the Algarve (South coast).

GENERAL DISTRIBUTION: Eastern Atlantic, from Norway and the British Islands to the NW coast of Morocco including Madeira and the Cape Verde Islands. Common throughout the Mediterranean. Sublittoral to a depth of about 26 m (NUNES-RUIVO, 1961).

Genus ***Eriphia*** LATREILLE, 1817

***Eriphia verrucosa* (FORSKÅL, 1775)**

*Eriphia spinifrons* NOBRE, 1936, p. 47, pl. 17, a, figs. 43-44.

*Eriphia verrucosa* ZARIQUIEY ALVAREZ, 1968, pp. 393-394, figs. 1, i, 135, b; NEVES, 1975, pp. 35-36.

MATERIAL EXAMINED: One single male with a carapace length of 12.0 mm and a width of 17.5 mm.

DISTRIBUTION IN PORTUGAL: The species is known along all the Portuguese coast, from Âncora (North coast) to Algarve (South coast).

GENERAL DISTRIBUTION: Eastern Atlantic, from the Bay of Biscay to Mauritania, including the Azores and Madeira. Also in the Mediterranean. Littoral.

Genus **Xantho** LEACH, 1814**Xantho pilipes** A. MILNE EDWARDS, 1867

*Xantho pilipes* NUNES-RUIVO, 1961, p. 28; ZARIQUIEY ALVAREZ, 1968, pp. 394, 395-398, fig. 130, b; NEVES, 1975, p. 36, fig. 12.

**MATERIAL EXAMINED:** Four males having a carapace up to 9.5 mm long and a width of 12.2 mm; five females, the largest with a carapace length of 8.2 mm and a width of 11.2 mm.

**DISTRIBUTION IN PORTUGAL:** *Xantho pilipes* has been recorded from northern Lisbon (8° 40'.8 N and 09° 26'.2 W in NUNES-RUIVO, 1961) and Setúbal (NEVES, 1975). However, as the species has been in the past often confused with *X. rivolosus* it is possible that some records of the latter mentioned by NOBRE (1936) correspond, actually, to *X. pilipes*.

**GENERAL DISTRIBUTION:** Eastern Atlantic, from the West coast of Norway and the British Islands southward to Angola. Also occurs in the Mediterranean. Intertidal to about 40 m (MANNING & HOLTHUIS, 1981).

**Xantho incisus** (LEACH, 1814)

*Xantho floridus* NOBRE, 1936, p. 52, pl. 20, fig. 37.

*Xantho incisus* ALMAÇA, 1959, p. 233; ALMAÇA, 1963, p. 7; NEVES, 1967, p. 276; INGLE, 1980, pp. 44, 117, figs. 66, 67, pl. 21, b.

*Xantho incisus incisus* ZARIQUIEY ALVAREZ, 1968, pp. 394, 398; NEVES, 1975, pp. 37-38, fig. 12.

**MATERIAL EXAMINED:** Seven females the largest with a carapace length of 8.5 mm and a width of 10.9 mm; ten females with a maximum carapace length of 12.0 mm and a maximum carapace width of 15.0 mm.

**DISTRIBUTION IN PORTUGAL:** *Xantho incisus* is known from the entire coast of Portugal and has been reported from Moledo in the North coast (NOBRE, 1936 as *X. floridus*) to the South (Algarve in CAPELLO, 1877 as *X. floridus*).

**GENERAL DISTRIBUTION:** Eastern Atlantic, from the North Sea southward to Morocco including the Azores, Madeira and Cape Verde Islands, possibly also from São Tomé and Príncipe (see MANNING & HOLTHUIS, 1981). It occurs usually from the littoral to about 30-40 m but has been recorded from 100 m deep.



Family **PINNOTHERIDAE** DE HAAN, 1833Genus **Pinnotheres** BOSCH, 1802**Pinnotheres pisum** (LINNAEUS, 1767)

*Pinnotheres pisum* NOBRE, 1936, pp. 67-68, pl. 26, fig. 64; ZARIQUIEY ALVAREZ, 1968, pp. 406, 409, figs. 136, b, f.

MATERIAL EXAMINED: One single male with a carapace length of 6.8 mm and a width of 7.0 mm; one ovigerous female with a carapace length of 11.6 mm and a width of 12.2 mm.

DISTRIBUTION IN PORTUGAL: *P. pisum* is known from all the Portuguese coast, from Porto (North coast) to Monte Gordo (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from the coast of Norway southward to Mauritania. Mediterranean. Commensal in Bivalves and possibly also in Ascidians. Intertidal to about 45 m (MANNING & HOLTHUIS, 1981).

Family **PARTHENOPIDAE** MACLEAY, 1838Genus **Parthenope** WEBER, 1795**Parthenope massena** (ROUX, 1830)

*Rhinolambrus massena* NOBRE, 1936, pp. 83-84, pl. 29, fig. 78

*Lambrus massena* NUNES-RUIVO, 1961, pp. 34-45.

*Parthenope massena* ZARIQUIEY ALVAREZ, 1968, pp. 437, 441-442, fig. 174.

MATERIAL EXAMINED: Two males, the largest with a carapace length of 16.2 mm and a width of 20.2 mm.

DISTRIBUTION IN PORTUGAL: The species has been reported from Cape Espichel (38° 24'.1 and 09° 14'.1 in NUNES-RUIVO, 1961 as *Lambrus massena*) to the South coast (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from Brittany to the Congo. Also in the Mediterranean. Littoral to about 100 m but has been recorded from 500 m deep (MONOD, 1956).

Family **MAJIDAE** SAMOUELLE, 1819

Genus **Pisa** LEACH, 1814

**Pisa tetraodon** (PENNANT, 1777)

*Pisa tetraodon* NOBRE, 1936, pp. 94-96, pl. 33, figs. 85, 86, pl. 84, figs. 85, 87; ZARIQUEY ALVAREZ, 1968, pp. 451, 452, figs. 6, d, 151, a, 152, a, 154, a.

MATERIAL EXAMINED: Nine males, the largest with a carapace length of 40.5 mm including the rostrum; five females with a maximum carapace length, including the rostrum, of 27.0 mm.

DISTRIBUTION IN PORTUGAL: *Pisa tetraodon* as been reported from the Portuguese coast only from Setúbal and Algarve (NOBRE, 1936).

GENERAL DISTRIBUTION: Eastern Atlantic, from the British Islands to Cabo Blanco and Mauritania. Also inhabits the Mediterranean. Sublittoral until 100 m (MONOD, 1956).

**Pisa nodipes** (LEACH, 1815)

*Pisa nodipes* ZARIQUEY ALVAREZ, 1968, pp. 452, 454, figs. 151, e, 152, f, 154, e.

MATERIAL EXAMINED: Four males with a maximum carapace length, including the rostrum of 16.5 mm; four females, the largest with a carapace length, including the rostrum, of 18.5 mm.

DISTRIBUTION IN PORTUGAL: According to NUNES-RUIVO (1961) the species described by NOBRE (1936 as *Pisa Gibbsi*), corresponds, very probably, to *Pisa nodipes*. However, as the description given by NOBRE (*op. cit.*) is quite dubious we decided to consider as valid the record of the species from Sagres as well as the one mentioned by UDEKEM D'ACÓZ (1988) from the Algarve.

GENERAL DISTRIBUTION: Eastern Atlantic, from the South coast of Portugal to Mauritania, including the Canary Islands, the Cape Verde Islands and Morocco. It can be also found in the Mediterranean. It is a sublittoral species which can occur to about 75 m.

Genus **Eurynome** LEACH, 1814**Eurynome aspera** (PENNANT, 1777)

*Eurynome aspera* NOBRE, 1936, pp. 93, pl. 32, fig. 82; NUNES-RUIVO, 1961, pp. 30-31; ZARIQUIEY ALVAREZ, 1968, pp. 462, figs. 14, g, 153, a, 154, f.

MATERIAL EXAMINED: Seven males, the largest with a carapace length, including the rostrum, of 7.9 mm; seven females, with a maximum carapace length of 8.5 mm.

DISTRIBUTION IN PORTUGAL: *E. aspera* has been recorded from Cape Espichel (38° 23'.7 and 09° 14'.4 W in NUNES-RUIVO, 1961) to the South coast (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from Norway, coast of Portugal and the Azores southward to Angola and probably South Africa (MANNING & HOLTHUIS, 1981). Mediterranean. From less than 10 to about 550 m deep.

Genus **Inachus** WEBER, 1795**Inachus phalangium** (FABRICIUS, 1775)

*Inachus dorhynchus* NOBRE, 1936, pp. 100-101, pl. 35, fig. 91; ZARIQUIEY ALVAREZ, 1968, pp. 470, 472, fig. 159, c.

MATERIAL EXAMINED: Two males, the largest with a carapace length of 15.0 mm; five ovigerous females, the largest with a carapace length of 15.9 mm.

DISTRIBUTION IN PORTUGAL: Northern Lisbon (Parede, Cruz Quebrada) to the South coast (Algarve).

GENERAL DISTRIBUTION: Eastern Atlantic, from the South of Norway, about 60° N, to the Cape Verde Islands. It occurs also in the Mediterranean. Sublittoral, from 10 to about 130 m.

Genus *Achaeus* LEACH, 1817*Achaeus gracilis* O. G. COSTA, 1839

*Achaeus gordonae* FOREST & ZARIQUIEY ALVAREZ, 1955, pp. 68-72, figs. 2, 4, 6, 8; ZARIQUIEY ALVAREZ, 1968, pp. 474-476, figs. 14, h, 160, c, d.

*Achaeus gracilis* HOLTHUIS & MANNING, 1981, pp. 253-254, 268.

MATERIAL EXAMINED: Five males, the largest with a carapace length of 8.5 mm; one female with a carapace length of 7.8 mm.

DESCRIPTION: The specimens studied present the following characters: carapace sub-triangular, longer than broader somewhat narrowed behind the orbital regions. Frontal region produced as a small rostrum consisting of two short spines separated by a narrow fissure, approximately V-shaped; the apices of the rostrum in the six specimens observed surpass the basis of the fourth article of the antennal peduncle. Orbits unarmed dorsally. Eystalks expanded distally with a small prominence on the anterior margin of the stalk.

Cardiac protuberance lower than gastric protuberance. Hepatic lobes poorly developed.

In the males the chelipeds are robust with the palm inflated, the fingers touching only in the distal third of the dactylus. Two strong truncate teeth can be observed in the interdigital space, one situated on the proximal inner margin of the fixed finger, the other on the median inner margin of the dactylus. Chelipeds of the female relatively slender.

Pereiopods long and slender, the first pair being the longest, the others decreasing in length posteriorly. Dactylus of the first pereiopod straight proximally and slightly curved distally. Dactylus of the second pereiopod slightly curved, of the third and fourth strongly curved, falciform, with strong spines along the inner margin.

DISTRIBUTION IN PORTUGAL: So far as we know, *Achaeus gracilis* has not been reported before from the Portuguese coast.

GENERAL DISTRIBUTION: Until 1955, two species of the genus *Achaeus* were recorded from the Mediterranean: *Achaeus cursor* H. MILNE EDWARDS & BOUVIER, 1898, a deep water form, and another species inhabiting shallower water designated as *Achaeus cranchii*. Then, FOREST & ZARIQUIEY (1955) established the conspecificity of the first species with the Atlantic *Achaeus cranchii* LEACH, 1917 while the second one was considered as representing

a new form which they named *Achaeus gordonae*. Later, MANNING & HOLTHUIS (1981) pointed out that an earlier name, *Achaeus gracilis* O. G. COSTA, 1839 should be used for the more recent species. According to those authors (*op. cit.*), this last form occurs only in the Mediterranean. Therefore its presence in Sagres shows that the species can also be found in the Eastern Atlantic and, due to this unclear situation, older records of *A. cranchii* outside the Mediterranean will have to be regarded with some reserve as they may correspond to *Achaeus gracilis*.

Genus **Macropodia** LEACH, 1814

**Macropodia rostrata** (LINNAEUS, 1761)

*Macropodia rostrata* NOBRE, 1936, pp. 104-105, pl. 35, fig. 92; FOREST & ZARIQUIEY ALVAREZ, 1964, pp. 225, 241, figs. 1, 12; FOREST, 1978, pp. 325, 327-329, figs. 2, 6, 13, 14, 18; MANNING & HOLTHUIS, 1981, pp. 301-303.

MATERIAL EXAMINED: Three males, the largest with a carapace length, including the rostrum, of 13.5 mm.

DESCRIPTION: Rostrum straight not extending beyond the middle of the fifth segment of the antennal peduncle. Margins of the rostrum ornamented to the apex with curved hairs.

Protogastric region smooth lacking dorsal tubercles medially. Gastric and cardiac regions with conical tubercles well-developed. Hepatic and branchial regions with a small tubercle not spiniform. A small intestinal tubercle present only in one of the specimens observed. Anterolateral margins lacking conical tubercles anteriorly to the articulation of the fifth pereopods.

Basal antennal segment smooth, without spines or spinules. Epistome with a pair of tubercles near the opening of the antennal gland. Fifth segment of antennal peduncle about 2.5 times as long as the fourth. Ocular peduncles lacking distinct anterior protuberance.

Chelipeds robust and spinose in the males. Dorsal region of the merus with a strong distal tooth, lateral margins and ventral region with small spines disposed in longitudinal rows.

Merus of second and third pereopods longer than carapace and rostrum, presenting distally a dorsal projection armed with 2-5 spines.

Dactylus of fourth and fifth pereopods slightly curved, ornamented ventrally with dense setae and small spines not extending beyond the proximal half.

First pleopod of the males with a strong S-shaped torsion in the distal half.

DISTRIBUTION IN PORTUGAL: *M. rostrata* seems to be a species rather common in Portugal and it has been recorded from the North coast (Viana do Castelo) to Monte Gordo in the South (Algarve).

GENERAL DISTRIBUTION: Until 1981, *M. rostrata* was reported from the coast of Norway (65° N) to Angola and South Africa, Mediterranean and the Black Sea. Then MANNING & HOLTHUIS (1981) showed that a number of records of *M. rostrata* corresponds, actually, to another species, *Macropodia spinulosa* (MIERS, 1881), the distribution area of which in the Eastern Atlantic has been established from the Cape Verd Islands and, at least, from Senegal southward to Angola. Therefore, records of *M. rostrata* northward to Senegal, such as those pointed out by CAPART (1951, in MANNING & HOLTHUIS, 1981) from the Spanish Sahara and STIMPSON (1907, in *op. cit.*) from Madeira, especially the latter, may be based on either *M. spinulosa* or *M. rostrata* requiring a reexamination. However, MANNING & HOLTHUIS (1981) do not exclude the hypothesis that the Atlantic and Mediterranean forms of *M. rostrata* may correspond to different species which requires a new verification. The species seems to be common from the littoral to about 30 m.

#### **Macropodia linearesi** FOREST & ZARIQUIEY ALVAREZ, 1964

*Macropodia linearesi* NUNES-RUIVO, 1961, p. 34, footnote (*nomem nudum*):  
FOREST & ZARIQUIEY ALVAREZ, 1964, pp. 233-234, figs. 5, 11, 16;  
ZARIQUIEY ALVAREZ, 1968, pp. 478-481, figs. 161, b, 162, a; FOREST,  
1978, pp. 325-327, figs. 1, 5, 10, 17; INGLE, 1980, pp. 133-134,  
figs., 93, 97, 101, pl. 30, a.

MATERIAL EXAMINED: Two ovigerous females, the largest with a carapace length of 9.9 mm including the rostrum.

DESCRIPTION: Rostrum short upturned dorsally not extending distally beyond the proximal fourth of the fifth segment of the antennal peduncle. Margins of the rostrum ornamented with curved hairs. The anterior margins of the antennular fossae are partially visible on dorsal view between the basal region of the rostrum and the basis of the fourth segment of antennal peduncle.

Proto gastric region smooth lacking internal dorsal tubercles. Gastric region with an obtuse spine situated dorsally. Cardiac region with a broad

based well-developed spine. Intestinal tubercle lacking. Branchial region with a pair of low tubercles situated anteriorly to the articulation of the fifth pereiopod.

Epistome very short only with a pair of small tubercles near the opening of urinary orifices.

Basal antennal segments smooth without spinules or granules. Fifth segment of antennal peduncle about 2.5 times as long as fourth. Ocular peduncles with a small anterior protuberance.

Chelipeds slender with the propodus not swollen. Dorsal region of the merus with a distal tooth. Dorsal region of the carpus with an obtuse tooth inferior to the articulation with the propodus. Proximal region of the carpus smooth lacking distinct tubercles.

Dactylus of second pereiopod  $\frac{3}{4}$  as long as merus. Merus of fifth pereiopod shorter than carapace. A small distal spine is visible only in the merus of the second pereiopod.

Dactylus of fourth and fifth pereiopods strongly arched, toothed ventrally only in the distal half of this segment.

DISTRIBUTION IN PORTUGAL: AS far as we know, the species has been reported from the Portuguese coast only in Cape São Vicente ( $37^{\circ} 1'.0$  N and  $08^{\circ} 59'.8$  W in NUNES-RUIVO, 1961, footnote).

GENERAL DISTRIBUTION. Eastern Atlantic, from the British Islands to Senegambia. Mediterranean. Known from depths of 20-30 m.

### **Macropodia longirostris** (FABRICIUS, 1775)

*Macropodia longirostris* FOREST & ZARIQUIEY, 1964, pp. 228-230, figs. 3, 7, 8, 14; ZARIQUIEY ALVAREZ, 1968, pp. 478, 481-482, figs. 161, d, 162, c, 164, a, b.

MATERIAL EXAMINED: One single female with a total length, including the rostrum, of 16.2 mm.

DESCRIPTION: Rostrum straight, short, overreaching the basis of the proximal segment of the antennal peduncle, ornamented with curved hairs not extending beyond the two proximal thirds of the margins.

Protogastric region smooth lacking dorsal tubercles. Gastric and cardiac regions each with a well-developed conical prominence, the gastric one slightly directed anteriorly, the cardiac prominence not so acute and lower than the first one. Intestinal tubercles low but distinct. Hepatic regions each with a pair of low tubercles near the posterior margin of the carapace and anterior to the articulation of the fifth pereiopods.

Epistome short, with two pairs of spinules longer and more acute than the ones situated laterally on each side of the epistome.

External margin of the antennular fossae anteriorly denticulated. Basal antennal segment with two spines on the right margin and three on the left side. These spines are strong and acute. Fourth segment with a distal spine. Ocular peduncles with a small anterior protuberance.

Chelipeds short, the merus being approximately as long as the distance between the gastric prominence and the posterior margin of the carapace. Ischium of the chelipeds with a strong spine in the inner margin. Merus with a large and acute dorsal spine near the distal margin of the segment; ventrally, in the distal third of the merus, a small spine can be observed. The proximal region of the carpus is armed with a strong dorsal spine; two other dorsal spines can be observed in the distal region of this article, the inner larger and more acute than the external one. The inner margin of the carpus is armed with two large spines situated respectively in the median and the proximal regions. The palm is ornamented with a row of spinules in the inner and the external margins; a row of spinules can also be observed ventrally.

Meri of second through fifth pereopods each with a large distal spine, the latter becoming lower from the second to the fifth pereopod.

Dactyli of fourth to fifth pereopods slightly arched and armed ventrally with two rows of spinules along the entire margin.

DISTRIBUTION IN PORTUGAL: According to FOREST (1965), the epithet *longirostris* has been in the past incorrectly applied to three different taxa: *Macropodia longirostris* proper, *Macropodia longipes* (A. MILNE EDWARDS & BOUVIER, 1899) and *Macropodia tenuirostris* LEACH, 1814. Therefore, older records of *M. longirostris* from Portugal (see NOBRE, 1936) are to be regarded with reserve as they may pertain to one of the three species mentioned above. We consider valid to Portugal only the record from Sagres.

GENERAL DISTRIBUTION: In 1964, FOREST & ZARIQUIEY ALVAREZ established that *Macropodia longirostris* is a species inhabiting exclusively the Mediterranean. However, considering the similitude of characters which can be observed between our specimen and the description given by those authors to the species in question, we have no doubts that the material collected in Sagres can be assigned to *Macropodia longirostris*. Therefore, the presence of this species in Sagres and consequently in the Eastern Atlantic enlarges considerably its distribution area.



## SUMMARY

This study concerns a collection of forty five species of CRUSTACEA DECAPODA captured in Sagres (Algarve).

For each one of the species is given the bibliography used in the determination, the number of males and females (ovigerous and non-ovigerous) the maximums measurements (length or length and width), distribution in Portugal and general distribution as well as other notes where appropriate. Some of the species are also described in more or less detail particularly the ones mentioned for the first time for the Portuguese coast and the species of the genus *Macropodia* frequently confused in the past.

This collection reveals to be particularly interesting since, among the material examined, the species *Pisidia longimana*, *Sirpus zariquiey*, *Achaeus gracilis* and *Macropodia longirostris* are cited for the first time for the Portuguese coast as well as for the Eastern Atlantic. *Ebalia edwardsii* is also cited for the first time for Portugal and two other species, *Pontophilus fasciatus* and *Pilumnus spinosus* though already mentioned by NOBRE (1931 and 1936) are also considered as new to our coast, once the descriptions given by this author are too ambiguous to be considered as valid, since they can refer as much to one species as to another of the same genus.

## SUMÁRIO

O presente trabalho ocupa-se do estudo de uma colecção de CRUSTÁCEOS DECAPODES capturados em Sagres (Algarve), a qual é constituída por quarenta e cinco espécies.

Para cada uma das espécies estudadas foi indicada a bibliografia utilizada na sua determinação, o numero de machos e de fêmeas (ovígeras e não ovígeras), as dimensões máximas dos exemplares (comprimento ou comprimento e largura), a distribuição em Portugal e a distribuição geral, além de outras anotações julgadas convenientes.

Algumas das espécies são acompanhadas por uma descrição mais ou menos pormenorizada, particularmente as espécies citadas pela primeira vez para Portugal ou as espécies do género *Macropodia* frequentemente confundidas até há poucos anos.

O material estudado revelou-se particularmente interessante, pois entre as espécies observadas, *Pisidia longimana*, *Sirpus zariquiey*, *Achaeus gracilis* e *Macropodia longirostris*, até hoje consideradas como tendo uma distri-

buição exclusivamente mediterrânica são citadas pela primeira vez para Portugal e, conseqüentemente, para o Atlântico Oriental, Também nova para Portugal é a espécie *Ebalia edwardsii*, conhecida sobretudo do Mediterrâneo, mas já duas vezes capturada no Atlântico Oriental (ZARIQUEY ALVAREZ, 1968). Além destas, também consideramos novas para a nossa fauna *Pontophilus fasciatus* e *Pilumnus spinifer* espécies que embora já citadas por NOBRE (1931 e 1936) foram objecto de descrições demasiado ambíguas para serem consideradas como válidas, uma vez que, tanto podem referir-se a estas espécies como a outras dos respectivos géneros.

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