ON A COLLECTION OF DECAPOD CRUSTACEA FROM SOUTHERN SARDINIA

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ABSTRACT

An account is given of a small collection containing 55 species of Decapod Crustacea obtained off southern coast of Sardinia.

The collection includes a previously unrecognized deep-water species of *Inachus*, identified with. *I. parvirostris* (Risso 1816).

Features that allow this species to be distinguished from *I. dorsettensis* (Pennant) are discussed and illustrated.

RIASSUNTO

Una collezione di Crostacei Decapodi della Sardegna meridionale: - Viene riportato, con annotazioni ecologiche, un elenco dei Crostacei Decapodi raccolti nel corso di campionamenti delle comunità bentoniche di alcuni fondali della Sardegna sud-occidentale.

Il materiale esaminato comprende una specie di *Inachus* che si identifica con *I. parvirostris* (Risso, 1816). Questa specie sembra vicariare, a maggiori profondità, *I. dorsettensis* (Pennant) propria di acque piú superficiali.

Le differenze morfologiche tra le due specie vengono discusse ed illustrate.

INTRODUCTION

The island of Sardinia [40° 00'N, 09° 00' E] (Figure 1) is located near the center of the western Mediterranean Sea, but, despite its geographic position and proximity to many centers of marine biological studies in southern Europe, little attention has been paid to its marine fauna. Apparently, only the Italian deep-sea expedition of the R/V "G. Washington" in 1881 investigated in some detail the seas around the island. The decapods collected during that cruise were studied by SENNA (1902), who described a new species of *Plesionika, P. gigliolii,* from off the southern coast of Sardinia (off Capo Carbonara). French expeditions of the "Travailleur" and

Quad. Lab. Tecnol. Pesca, 3 (2-5), 319-334.

"Talisman" took only a few samples off its northern coasts, and the same is true for the expeditions of the Prince of Monaco (A. MILNE EDWARDS and BOUVIER 1899, 1900; BOUVIER 1922). Some Sardinian localities also are quoted in TARGIONI TOZZETTI (1880), in a list of species presented at the international fisheries exposition in Berlin. A limited amount of additional information on the decapod fauna of Sardinia can be found in papers dealing primarily with aspects of the fisheries there: shrimp surveyes (MAURIN 1965; LUMARE and UTZERI 1973; CAU and MURA 1978) or lobster fisheries (SANTUCCI 1927, 1928; COTTIGLIA et al. 1976).

In 1971, an aluminum plant was built at Porto Vesme, on the southern coast of Sardinia (Figure 1), and dumping offshore of a by-product of the plant, red muds,

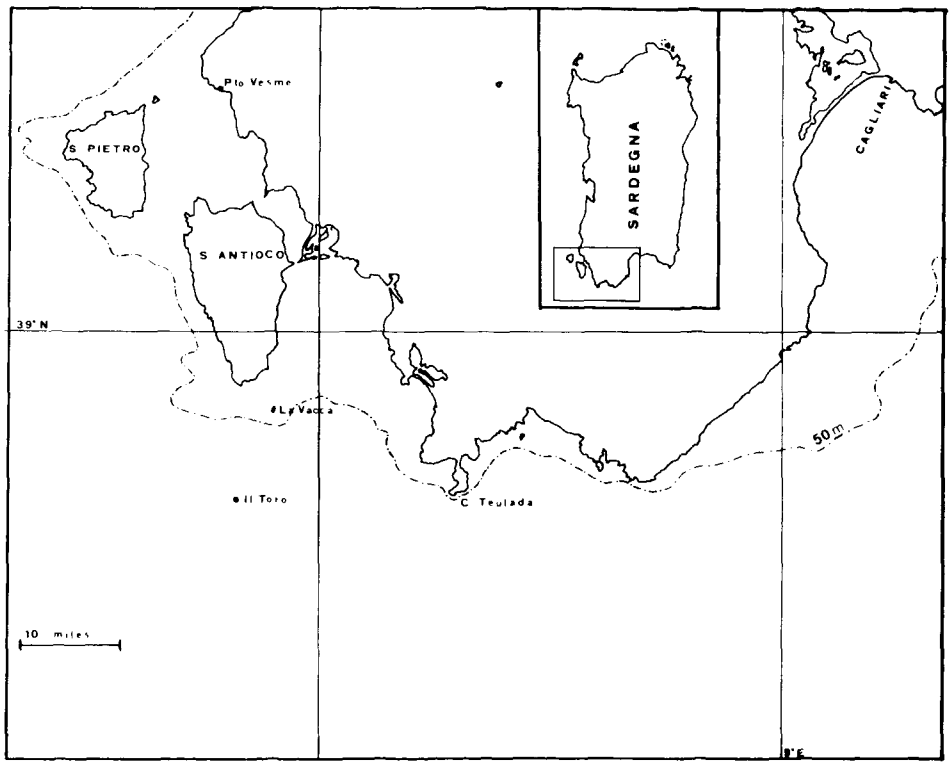

Fig. 1. Collecting localities off southwestern Sardinia.

was temporarily allowed. A study of the bottom communites in the littoral areas that could be affected by the dumping of red muds was undertaken in 1972 and 1973 with the financial support of Euroallumina S.p.A.. Sampling, mainly on sea grass prairies and rocky shores, was performed by divers or carried out with dredges and grabs, depending upon the habitat. The decapods collected were sent to the Istituto di Tecnologia della Pesca, Ancona, for identification.

In 1973 a limited bottom trawling survey was initiated to study possible influence of the red muds on trawl fisheries, and one of us (C.F.) was invited to participate in the sampling program. Unfortunately, the major part of the material collected during this latter survey, in depths ranging from 60 to 500 m., was lost in storage. For this reason, species like *Nephrops norvegicus, Polycheles typhlops, Plesionika martia,* and *Aristaeomorpha foliacea,* very common in some catches and recorded at sea, are not found in the collection. The material, totalling some 55 species, is at present deposited in Froglia's collection. For each of the species reported here, we include available information on collection locality, depth, habitat, and sampling gear. Specimens in the Smithsonian collections at Washington are identified by the acronym USNM. Measurements in millimeters given are carapace length (c.l., from posterior margin of eye socket to posterior margin of carapace) for shrimps and Macrura Reptantia; shield length (s.l.) for Paguridea; and total length of carapace (c.l., from tip of rostrum to posterior margin) for Galatheidea and Brachyura.

Finally some morphological features of a species of *Inachus,* taken in relatively deep samples off Sardinia, are compared with material from elsewhere in the Mediterranean and the Atlantic as well. As we discuss in more detail below, under our account of *Inachus parvirostris,* Mediterranean specimens formerly referred to *Inachus dorsettensis* actually should be referred to two species: *Inachus dorsettensis* sensu stricto, a species with short dorsal spines and relatively short legs which generally occurs in shallow water, and *Inachus parvirostris* (Risso), a species with long dorsal spines and long slender legs which occurs in depths generally below 90 meters.

NATANTIA

Penaeidae

Parapenaeus longirostris Lucas

Off Isola del Toro (38°52'N 08°29'E), depth 90-135 m, muddy bottom with *Funiculina quadrangularis,* bottom trawl, 21/9/1973, 3 ♂ c.l. 15-24 mm, 1 ♀ c.l. 27 mm.

12 miles S of Isola del Toro (38°40'N 08° 27'E), depth 290-360 m, sandy mud, bottom trawl, 22/9/1973, 1 ♀ c.l. 16.5 mm.

Pandalidae

Plesionika antigai Zariquiey Alvarez

12 miles S of Isola del Toro (38°40'N 08°27'E), depth 290-360 m, sandy mud, bottom trawl, 22/9/1973, 2 ♂ c.l. 11.2-12.5 mm, 2 ♀ c.l. 11.2-16.4 mm (♀ ovigerous c.l. 11.2 mm; diameter embryonated egg 0.4 x 0.65 mm).

Hippolytidae

Hippolyte inermis Leach

Porto Teulada (38°56.5'N 08°43.5'E), depth 1 m, coastal sand with *Cymodocea nodosa,* diving, hand net, 23/9/1973, 3 ♀ c.l. 2.5-3.9 mm (2 ♀ ovigerous c.l. 3.8-3.9 mm; egg diameter 0.35 mm, embryonated egg diameter 0.4 × 0.5 mm).

Hippolyte longirostris (Czerniavsky)

SE of Punta Trettu (39°06.4'N 08°26'E), depth 0-4 m, sand with *Caulerpa prolifera,* Picard dredge, 7/4/1972, 3 ♂ c.l. 1.3-1.4 mm, 9 ♀ c.l. 2.0-2.6 mm (7 ♀ ovigerous c.l. 2.5-2.6 mm; egg diameter 0.3-0.4 mm).

Thoralus cranchii (Leach)

SE of Punta Trettu (39°06.4'N 08°26'E), depth 0-4 m, sand with *Caulerpa prolifera,* Picard dredge, 7/4/1972, 1 ♀ ovigerous c.l. 3.8 mm (egg diameter 0.4 mm).

Alpheidae

Athanas nitescens (Leach)
Between S. Pietro and S. Antioco (39°07.3'N 08°19.9'E), depth 10 m, mat of *Posidonia oceanica,* grab, 18/7/1972, 1 ♂ c.l. 3.3 mm.
S. Antioco, off Secca delle Saline (39°05.7'N 08°21.3'E), depth 28 m, sand with *Posidonia oceanica,* grab, 5/4/1972, 1 ♂ c.l. 3.9 mm.

Alpheus dentipes Guérin

S. Antioco, off Scoglio Mangiabarche (39°04.4'N 08°20.7'E), depth 0-18 m, rocky bottom with *Cystoseira* spp., diving, 17/7/1972, 2 ♂ c.l. 3.6.-4.5 mm.
Canale di S. Pietro, E of Carloforte (39°08'N 08°20.2'E), depth 10 m, sand, inter mat channel, diving, 5/4/1972, 1 ♂ c.l. 7.8 mm.
S. Antioco, South Secca delle Saline (39°05.2'N 08°21'E), depth 3-15 m, sand with *Posidonia oceanica,* Picard dredge, 7/4/1972, 1 ♀ c.l. 5.1 mm.
S. Antioco, South Secca delle Saline (39°05.8'N 08°21'E), depth 0-10 m, rocky bottom with *Cystoseira* spp., diving, 14/7/1972, 1 ♂ c.l. 5.5 mm.

Alpheus glaber (Olivi)

Off Isola del Toro (38°52'N 08°29'E), depth 90-135 m, muddy bottom with *Funiculina quadrangularis,* bottom trawl, 21/9/1973, 1 ♀ ovigerous c.l. 10.4 mm (embryonated egg diameter 0.6 × 0.8 mm).

Alpheus macrocheles (Hailstone)

Canalè di S. Pietro (39°07.3'N 08°19.9'E), depth 10 m, sand with mat of *Posidonia oceanica,* grab, 18/7/1972, 1 ♂ c.l. 6.1 mm, 1 ♀ ovigerous c.l. 6.7 mm (egg diameter 0.5 mm).

Palaemonidae

Palaemon elegans Rathke

Porto Teulada (38°56.5'N 08°43.5'E), depth 1 m, coastal sand with *Cymodocea nodosa,* diving, hand net, 23/9/1973, 1 ♀ c.l. 10.4 mm.

Palaemon xiphias Risso

Porto Teulada (38°56.5'N 08°43.5'E), depth 1 m, coastal sand with *Cymodocea nodosa* and *Posidonia oceanica,* diving, hand net, 23/9/1973, 8 juv. c.l. 2.8-5.0 mm.

Crangonidae

Pontocaris lacazei (Gourret)

Off Isola del Toro (38°52'N 08°29'E), depth 90-135 m, muddy bottom with *Funiculina quadrangularis,* bottom trawl, 21/9/1973, 1 ♀ c.l. 8.9 mm.

Pontophilus spinosus (Leach)

8 miles SW of Isola del Toro (38°48'N 08°13'E), depth 210 m, sandy mud, edge of continental shelf, bottom trawl, 22/9/1973, 1 ♀ c.l. 7.3 mm.

Palinuridae

Palinurus elephas (Fabricius)

Near Isola della Vacca (38°51'N 08°28'E), depth 70 m, coarse sand with free calcareous algae, bottom trawl, 20/9/1973, 1 ♀ c.l. 71.5 mm.
11 miles W of S. Antioco (39°01'N 08°07'E), depth 160 m, sand, edge of continental shelf, bottom trawl, 1/4/1974, 1 ♀ c.l. 73 mm.

Axiidae

Calocaris macandreae Bell

W of S. Antioco (38°58.5'N 08°11.4'E), depth 126 m, sandy mud, dredge, 28/7/1972, 1 ♂ c.l. 6.3 mm (ovary visible through cuticle).
15 miles S of Isola del Toro (38°37.3'N 08°25.2'E), depth 660 m, bathyal mud, grab, 24/8/1973, 1 ♂ c.l. 5.0 mm.

Callianassidae

Calliax punica De Saint Laurent and Manning

Porto Scuso, west beach (39°12.1'N 08°22.5'E), washed ashore, collected still alive, 3/4/1974, 1 ♂ c.l. 13.3 mm.

Upogebidae

Upogebia deltaura Leach

8 miles SE of Isola del Toro (38°46.4'N 08°32.1'E), depth 120 m, sandy mud with broken shells, grab, 2/8/1972, 1 ♂ c.l. 7.0 mm.

Diogenidae

Diogenes pugilator (Roux)

Isola S. Pietro, Seccagno (39°07.1'N 08°18'E), depth 2.5 m, *Cymodocea nodosa* bed, diving, 19/7/1972, 1 ♂ c.l. 3.9 mm.

Paguristes oculatus (Fabricius)

Canale di San Pietro (39°07.3'N 08°19.9'E), depth 10 m, sand with clumps of *Posidonia oceanica,* grab, 18/7/1972, 1 ♂ juv. s.l. 2.7 mm.
Near Isola della Vacca (38°51'N 08°28'E), depth 67-80 m, coarse sand with free calcareous algae, bottom trawl, 20/9/1973, 2 ♂ s.l. 11.2-12.2 mm, 2 ♀ ovigerous s.l. 8.3-10.6 mm (egg diameter 0.8-1.1 mm).
Isola S. Antioco, Calasetta (39°06.3'N 08°23'E), depth 2.5 m, flat with *Caulerpa prolifera,* grab, 14/7/1972, 1 ♀ s.l. 7.0 mm.
Porto Teulada (38°56.5'N 08°43.5'E), depth 1 m, coastal sand with *Cymodocea nodosa* and sparse clumps of *Posidonia oceanica,* diving, hand net, 23/9/1973, 1 ♀ s.l. 8.9 mm.
Canale di San Pietro (39°08'N 08°20'E), depth 2.5 m, sandy mud with *Cymodocea nodosa,* grab, 14/7/1972, 1 ♂ s.l. 3.1 mm.

Clibanarius erythropus (Latreille)

Porto Teulada (38°56.5'N 08°43.5'E), depth 1 m, coastal sand with *Cymodocea nodosa* and sparse clumps of *Posidonia oceanica,* diving, hand net, 23/9/1973, 2 ♂ s.l. 6.6-8.2 mm, 1 juv. s.l. 2.9 mm (parasitized by epicaridean isopod).

Dardanus arrosor (Herbst)

8 miles SW of Isola del Toro (38°48'N 08°13'E), depth 210 m, sandy mud, edge of continental shelf, bottom trawl, 22/9/1973, 1 ♀ s.l. 16.7 mm.
Near Isola della Vacca (38°51'N 08°28'E), depth 67-80 m, coarse sand with free calcareous algae, bottom trawl, 20/9/1973, 4 ♂ s.l. 10.1-7.2 mm, 2 ♀ s.l. 5.7-9.9 mm.

Paguridae

Pagurus alatus Fabricius

Off Isola del Toro (38°52'N 08°29'E), depth 90-135 m, muddy bottom with *Funiculina quadrangularis,* bottom trawl, 21/9/1973, 2 ♂ s.l. 3.5-9.6 mm.

Pagurus cuanensis Bell

S. Antioco, off Scoglio Mangiabarche (39°04.4'N 08°20.7'E), depth 0-18 m, rocky bottom with *Cystoseira* spp., diving, 17/7/1972, 1 ♀ s.l. 4.5 mm.

Pagurus prideaux Leach

Near Isola della Vacca (38°51'N 08°28'E), depth 67-80 m, coarse sand with free calcareous algae, bottom trawl, 20/9/1973, 4 ♂ s.l. 10.6-12.4 mm.

Anapagurus breviaculeatus Fenizia

Canale di San Pietro (39°08'N 08°20.2'E), depth 10 m, sand, inter mat channel, diving, 5/4/1972, 1 ♂ s.l. 1.0 mm.

Anapagurus chiroachanthus (Lilljeborg)

Canale di San Pietro (39°07.3'N 08°19.9'E), depth 10 m, sand with mats of *Posidonia oceanica,* grab, 18/7/1972, 1 ♂ s.l. 1.0 mm.

Anapagurus laevis (Bell)

Near Isola della Vacca (38°51'N 08°28'E), depth 67-80 m, coarse sand with free calcareous algae, bottom trawl, 20/9/1973, 1 ♂ s.l. 1.0 mm.

Cestopagurus timidus (Roux)

S. Antioco, near Secca delle Saline (39°05.7'N 08°21.3'E), depth 0-8 m, sand with *Posidonia oceanica,* diving, 7/4/1972, 1 ♀ s.l. 0.8 mm.

Galatheidae

Galathea bolivari Zariquiey Alvarez

Porto Teulada (38°56.5'N 08°43.5'E), depth 0.5 m, rocks with *Cvstoseira* sp., washing plants of *Cystoseira* collected by diving, 23/9/1973, 1 juv.
San Antioco, near Secca delle Saline (39°05.8'N 08°21'E), depth 6 m, on *Posidonia oceanica,* 14/7/1972, 1 ♀ ovigerous, c.l. 5.7 mm, (egg diameter 0.3-0.4 mm).

Galathea dispersa Bate

Off Isola del Toro (38°52'N 08°29'E), depth 90-135 m, muddy bottom with *Funiculina quadrangularis,* bottom trawl, 21/9/1973, 1 ♂ c.l. 6.5 mm.

Galathea intermedia Lilljeborg

Off Isola del Toro (38°52'N 08°29'E), depth 90-135 m, muddy bottom with *Funiculina quadrangularis,* bottom trawl, 21/9/1973, 1 ♀ ovigerous c.l. 7.7 mm.

Galathea squamifera Leach

Canale di San Pietro (39°05.7'N 08°21.3'E), depth 28 m, on *Posidonia oceanica,* grab, 7/4/1972, 1 ♀ c.l 8.5 mm.

San Pietro, off La Punta (39°11.1'N 08°18.1'E), depth 35 m, rocky bottom with algae, Picard dredge, 4/4/1972, 1 ♂ c.l. 9.1 mm.

BRACHYURA

Latreilliidae

Latreillia elegans Roux

8 miles SW of Isola del Toro (38°48'N 08°13'E), depth 210 m, sandy mud, edge of continental shelf, bottom trawl, 22/9/1973, 1 ♂ c.l. 7.5 mm.

Dorippidae

Ethusa mascarone (Herbst)

Near Isola della Vacca (38°51'N 08°28'E), depth 70 m, coarse sand with free calcareous algae, bottom trawl, 20/9/1973, 1 ♀ c.l. 8.5 mm.

Calappidae

Calappa granulata (Linnaeus)

Near Isola della Vacca (38°51'N 08°28'E), depth 70 m, coarse sand with free calcareous algae, bottom trawl, 20/9/1973, 1 ♂ c.l. 20 mm.

Leucosiidae

Ebalia deshayesi Lucas

8 miles South of Capo Teulada (38°45'N 08°40'E), depth 130 m, muddy sand, grab, 2/8/1972, 1 ♀ c.l. 6.4 mm.

Ebalia nux Norman

11 miles W of Isola del Toro (38°50'N 08°11'E), depth 176 m, muddy sand, dredge, 27/7/1972, 1 ♂ c.l. 4.6 mm.

Ebalia tuberosa (Pennant)

Near Isola della Vacca (38°51'N 08°28'E), depth 70 m, coarse sand with free calcareous algae, bottom trawl, 20/9/1973, 1 ♀ c.l. 10.7 mm.

Thiidae

Thia scutellata Fabricius

S. Antioco, N of Scoglio Mangiabarche (39°04.7'N 08°19.4'E), depth 24 m, coarse sand, edge of *Posidonia* prairie, grab, 13/7/1972, 1 ♂ c.l. 8.7 mm.

Pirimelidae

Pirimela denticulata (Montagu)

Canale di S. Pietro, 13/7/1972, 1 ♂ c.l. 13.0 mm.

Portunidae

Carcinus aestuarii Nardo

Punta Trettu (39°06'N 08°26'E), depth 0-4 m, *Caulerpa prolifera,* dredge, 7/4/1972, 1 ♀ c.l. 24.5 mm.

Liocarcinus arcuatus (Leach)

Half mile NW of Punta Trettu (39°07'N 08°25'E), depth 5 m, *Caulerpa prolifera,* grab, 14/7/1972, 1 ♂ c.l. 19.4 mm.
Canale di S. Pietro (39°07'N 08°20'E), depth 10 m, sand with *Posidonia* mat, grab, 18/7/1972, 1 ♀ ovig. c.l. 9.3 mm, (egg diameter 0.29 mm); 1 juv. c.l. 4.8 mm. Same locality, 4/4/1972, 1 ♀ c.l. 14.2 mm.
Half mile E of Calasetta (39°06'N 08°23'E), depth 3 m, *Caulerpa prolifera,* grab, 14/7/1972, 1 ♀ c.l. 8.5 mm.
S. Antioco, Punta Salina (39°06'N 08°21.5'E), depth 2 m, flat with *Cymodocea nodosa,* 12/7/1972, 1 ♂ c.l. 7.5 mm.

Liocarcinus depurator (Linnaeus)

Off Isola del Toro (38°52'N 08°29'E), depth 90-135 m, muddy bottom with *Funiculina quadrangularis,* bottom trawl, 21/9/1973, 3 ♂ c.l. 19.5-25.5 mm, 2 ♀ c.l. 18-26 mm.

Liocarcinus zariquieyi Gordon

Scoglio La Ghinghetta (39°12'N 08°21'E), depth 22 m, coarse sand and gravel, dredge, 4/4/1972, 1 ♂ c.l. 12.5 mm.

Liocarcinus corrugatus (Pennant)

1.5 miles W of Portoscuso (39°12'N 08°21'E), depth 25 m, sand and gravel, dredge, 4/4/1972, 1 ♀ c.l. 15.0 mm.
Porto Teulada, in trammel net of local fishermen, 24/9/1973, 1 ♀ c.l. 31 mm.

Xanthidae

Pilumnus hirtellus (Linnaeus)

Canale di S. Pietro, Scoglio Mangiabarche (39°04'N 08°21'E), depth 0-18 m, rocky bottom with *Cystoseira* spp., diving, 17/7/1972, 1 ♂ c.l. 5.6 mm.
S. Pietro, E of Punta delle Colonne (39°05.7'N 08°18.2'E), depth 0-3 m, rocky bottom with algae, diving, 13/7/1972, 1 ♂ c.l. 4.7 mm, 1 ♀ c.l. 4.0 mm.

Xantho pilipes A. Milne Edwards

Canale di S. Pietro (39°07'N 08°20'E), depth 10 m, sand with *Posidonia oceanica,* grab, 18/7/1972, 1 ♂ c.l. 8.7 mm.

Grapsidae

Pachygrapsus marmoratus (Fabricius)

Porto Teulada (38°56'N 08°44'E), depth 0 m, rocks, tide level, 23/9/1973, 3 ♀ c.l. 15.7 - 23.5 mm (biggest female parasitized by a sacculinid).

Majidae

Maja crispata Risso

Porto Teulada (38°56'N 08°44'E), depth 1 m, rocky bottom with algae, 23/9/1973, 1 ♂ c.l. 33 mm.

Pisa tetraodon (Pennant)

N of Punta delle Saline (39°06'N 08°21'E), depth 0-8 m, *Caulerpa prolifera,* dredge, 7/4/1972, 2 ♀ c.l. 8.8 - 13.8 mm.
Porto Teulada (38°56'N 08°44'E), depth 1 m, rocky bottom washing of *Cystoseira* sp., 23/9/1973, 2 ♂ c.l. 11.4 - 19.6 mm.

Eurynome aspera (Pennant)

8 miles S of Capo Teulada (38°45'N 08°40'E), depth 130 m, muddy sand, grab, 2/8/1972, 1 ♀ c.l. 12.2 mm.

Acanthonyx lunulatus (Risso)

N of Punta delle Saline (39°06'N 08°21'E), depth 0-8 m, *Posidonia oceanica,* diving, 7/4/1972, 1 ♂ c.l. 10.9 mm.

Macropodia linaresi Forest and Zariquiey Alvarez

Near Isola della Vacca (38°51'N 08°28'E), depth 70 m, coarse sand with free calcareous algae, bottom trawl, 20/9/1973, 2 ♂ c.l. 4.1-5.7 mm, 2 ♀ c.l. 5.3-5.7 mm (1 ♀ c.l. 5.3 mm ovigerous, egg diameter 0.35 mm) (biggest ♀ parasitized by sacculinid).

Macropodia longipes (A. Milne Edwards and Bouvier)

Off Isola del Toro (38°52'N 08°29'E), depth 90-135 m, muddy bottom with *Funiculina quadrangularis,* bottom trawl, 21/9/1973, 3 ♂ c.l. 6.8-8.5 mm, 1 ♀ ovigerous c.l. 7.2 mm (egg diameter 0.7 mm).

Inachus dorsettensis (Pennant)

Near Isola della Vacca (38°51'N 08°28'E), depth 70 m, coarse sand with free

calcareous algae, bottom trawl, 20/9/1973, 2 ♂ c.l. 10.7-11.2 mm.
About 11 miles W of S. Antioco island, depth 150 m, 31/3/1974, 2 ♀ ovigerous c.l. 9.3-9.5 mm (egg diameter 0.7 mm).

In addition the following material collected in the Adriatic sea was also examined:

Lat. 45°15'N Long. 12°55'E, depth 29 m, coarse sand, marl, 11/4/1975, 2 ♀ c.l. 12.7-15.0 mm (smallest ♀ ovigerous).
Lat. 43°54'N Long. 13°26'E, depth 55 m, 2 ♀ ovigerous c.l. 10.7 and 13.0 mm (USNM).
Lat. 43°44.7'N Long. 13°37.3'E, depth 47 m, 10/1/1972, 1 ♂ c.l. 13.2 mm, 1 ♀ c.l. 17.5 mm.
Lat. 43°30'N Long. 14°04'E, depth 70 m, 2/8/1971, 1 ♀ ovigerous c.l. 14.5 mm.

Inachus parvirostris (Risso, 1816) Figs. 2, 3

Macropus parvirostris Risso, 1816, p. 39 [Nice].
Doclea fabriciana Risso, 1827, p. 28 [Nice].
Inachus dorsettensis. — A. Milne Edwards and Bouvier, 1900, p. 143 [part, material from off Cap Sicié]. — Griffin, 1974, p.18 [part; material from off Cap Sicié]. — Holthuis, 1977, p. 74 [literature]. [Not *Inachus dorsettensis* (Pennant, 1777).].
Inachus scorpio. — Magri, 1911, p. 6 [Aci Trezza, 100-200 m].

Off Isola del Toro (38°52'N 08°29'E), depth 90-135 m, muddy bottom with *Funiculina quadrangularis,* bottom trawl, 21/9/1973, 3 ♂ c.l. 5.9-8.3 mm, 1 ♀ ovigerous c.l. 8.0 mm (1 ♂ USNM).

Messina, Italy, 1-20/5/1893, H.J. Hansen, 2 ♂ c.l. 9.8-12.7 mm, 2 ♀ c.l. 5.4-10.0 mm (larger ovigerous) (Zoological Museum, Copenhagen).
Off Cap Sicié, France, Lat. 43°01'N Long. 03°28'E (of Paris, 05°48'E of Greenwich), 445 m, coralligenous bottom, *Travailleur* no. 9, 6 July 1881, 1 ♂ c.l. 12.5 mm, 2 ♀ ovigerous c.l. 9.4-10.1 mm (male is neotype, reg. no. Crust. D. 31784, Rijksmuseum van Natuurlijke Historie, Leiden; females are USNM 22972).
North of Pomo Island, Adriatic Sea, Lat. 42°59.3'N Long. 14°29.5'E to Lat. 43°01.3'N Long. 14°34.2'E, 120 m, 16 May 1978, 4 ♂ c.l. 7.0-9.2 mm, 4 ♀ c.l. 6.3-7.3 mm (smallest ♀ ovigerous; 1 ♂, 1 ♀ USNM).

Description. - Size small, carapace lengths of adults less than 13 mm.

Carapace slender, distinctly longer than broad, length 1.09 - 1.27 times width in males, 1.10-1.29 times width in female. Gastric region with 4 tubercles, outer 2 largest, in transverse row anterior to slender, erect gastric spine, latter higher, more inclined posteriorly than slender, erect cardiac spine. Each branchial region with erect slender spines, inclined laterally but not recurved anteriorly, with dorsal tubercle or patch of tubercles anterior to each spine, and with anterolateral spine directed ventrally. Hepatic lobe with 2 distinct spines and with smaller tubercles scattered on surface. Rostral horns slender, apices sharp, curved medially. Eyes large, but not extending laterally beyond slender, curved postorbital spine. Interantennular spine strong, visible in dorsal view, overreaching rostral spines in some specimens. Bran-

chial margin of carapace tuberculate, continuous anteriorly with free epimeral margin. Epistome with 2 tubercles anterior to urinary pore.

Basal antennal segment with row of erect tubercles or spinules, posteriormost and anteriormost largest, latter prominent, clearly visible in dorsal view.

Chelipeds subequal, slightly inflated and longer than carapace in males, subequal to carapace in female. Fingers longer than palm in both sexes. Merus longer than propodus in female, slightly shorter in male.

Second pereiopod longest, slightly more than 4 times (4.04 - 4.11) longer than carapace in males, 3.25 times as long as carapace in female. Merus and propodus longer than carapace, merus slender, length 17.5 to 21 times width in males, 13.5 to 15 times width in females. Remainder of pereiopods decreasing in size posteriorly.

Third pereiopod falling short of or extending to distal margin of propodus of second, overreaching carpus of second by half to two-thirds of propodus. Dactylus shorter than propodus, with subdistal tubercle ventrally. Merus as long as carapace in males, shorter in female.

Fourth pereiopod extending to or slightly overreaching distal margin of propodus of third. Dactylus more curved than those of preceding legs, shorter than propodus, with 2 subdistal tubercles ventrally. Merus shorter than carapace in both sexes.

Fifth pereiopod falling short of or overreaching by tip of dactylus propodus of fourth leg. Dactylus distinctly curved, similar in shape to but shorter than that of fourth leg, shorter than propodus, with 2 (1 in one specimen) subdistal tubercles ventrally. Merus shorter than carapace in both sexes.

Male abdomen and gonopod as illustrated (Fig. 3*d, e*).

Ova few in number and small, diameter 0.7 mm.

Remarks. - We identify this species of *Inachus* with a species described in 1816 by A. RISSO, *Macropus parvirostris,* and named again by the same author in 1827 as *Doclea fabriciana.* RISSO (1816, p. 39) noted that this species was "garni de six long épines" (2 postocular, 4 dorsal). As pointed out by HOLTHUIS (1977, pp. 74-75), RISSO's accounts best fit the two species of spider crabs from the Mediterranean then known as *I. communissimus* and *I. dorsettensis;* RISSO's name would take precedence over the former and fall as a synonym of the latter. He suggested that a neotype should be selected for both of RISSO's species in such a way that both names would fall as a synonym of *I. dorsettensis.*

RISSO's accounts are generalized enough to fit any of the three similar species of *Inachus* now known to occur in the Mediterranean. One difficulty we have in identifying his species with the species recognized herein is the size of his specimens, given as 20 by 20 mm in both accounts. This would suggest that he was dealing with the large species, either *I. communissimus* or *I. dorsettensis* sensu stricto. However, RISSO's measurements are not always reliable (see HOLTHUIS 1977, p. 71, under *Brachynotus sexdentatus),* and we believe that his mention of the long spines as well as the occurrence of the species in "algues profondes" strongly suggested that he was dealing with the deep-water species, recognized here as *I. parvirostris,* rather than either of the two shallow-water species known from the Mediterranean.

In order to establish the identity of RISSO's species, we select here as the neotype of *Macropus parvirostris* Risso (1816, p. 39) and also as the neotype of

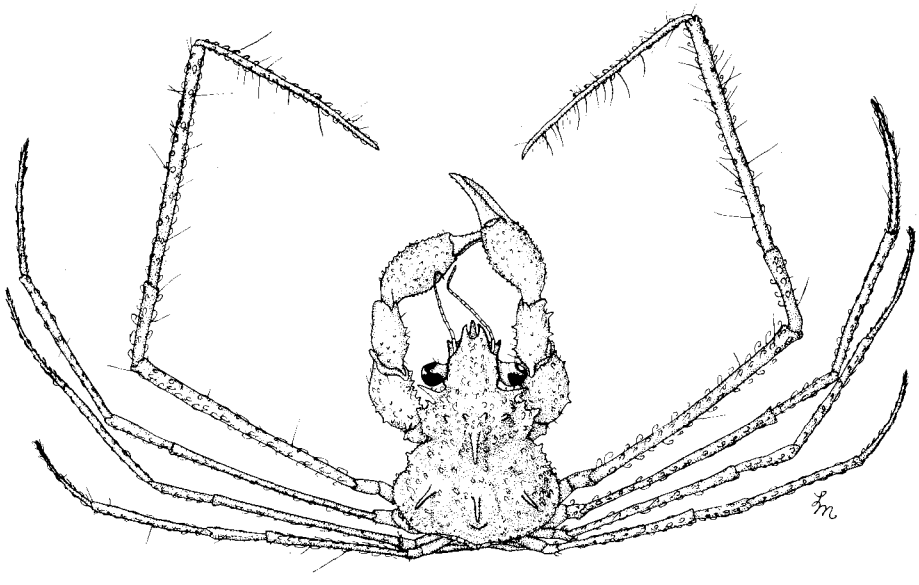

Fig. 2. ***Inachus parvirostris*** **(Risso), off Isola del Toro, male, c.l. 8.3 mm.**

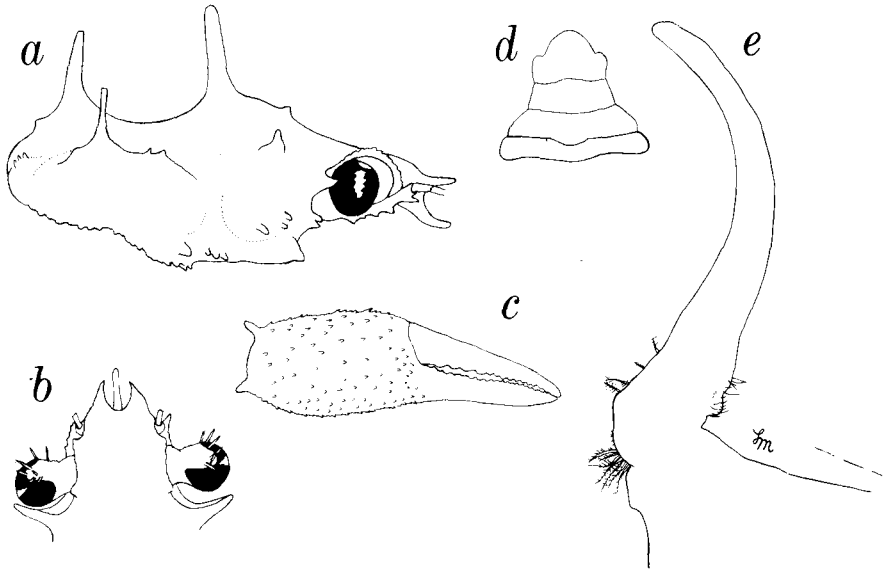

Fig. 3. ***Inachus parvirostris*** **(Risso), off Isola del Toro, male, c.l. 8.3 mm:** ***a,*** **carapace, side view;** ***b,*** **front;** ***c,*** **chela;** ***d,*** **abdomen;** ***e,*** **gonopod.**

Doclea fabriciana Risso (1827, p. 28) a male, c.l. 12.3 mm, collected by the *Travailleur* on 6 July 1881 off Cap Sicié, Mediterranean coast of France, at Lat. 43°01'N, Long. 03°28'E (of Paris, Long. 05°48'E of Greenwich), in 445 meters on coralligenous bottom. It has been deposited in the Rijksmuseum van Natuurlijke Historie, Leiden, the Netherlands, under registry number Crustacea D.31784.

This small, long-spined, deep-water species can immediately be distinguished from *I. dorsettensis* by its smaller size, slender carapace with its erect dorsal spines, and by its long, thin walking legs. *Inachus parvirostris* may not exceed a carapace length of 13 mm as adults, and females may be ovigerous at a carapace length of only 6.3 mm. In contrast, INGLE (1980, p. 129) reported that *I. dorsettensis* from England may achieve a carapace length of 35 mm, and the smallest ovigerous female he examined was 17 mm long.

The long, thin pereiopods provide the easiest way to distinguish *I. parvirostris* from *I. dorsettensis*. In our material of *I. parvirostris*, the merus of the second pereiopod (first walking leg) is 17.5 to 21 times longer than broad in males, 13.5 to 15 times longer than broad in females, whereas in our specimens of *I. dorsettensis* from both Atlantic and Mediterranean localities, that merus is 9 to 13 times longer than broad in males, 8 to 11 times longer than broad in females. In small females (c.l. 5.8 to 11.0 mm) of *I. dorsettensis* from the Atlantic coast of Spain (USNM 121908) these ratios range from 8.3 to 9.3, whereas in females of *I. parvirostris* from off Pomo Island in the Adriatic with carapace lengths of 6.3 mm (ovigerous) to 7.3 mm, the merus is 13.5 to 15 times longer than wide.

FOREST (1965, p. 391) pointed out that Mediterranean specimens of *I. dorsettensis* were smaller than their Atlantic counterparts, the former rarely attaining a length of 20 mm, the latter often reaching a carapace length of 28 to 30 mm. He also noted that Mediterranean specimens had longer ambulatory legs and longer dorsal spines on the carapace. These latter characteristics may have been based upon material of *I. parvirostris*. Mediterranean specimens of *I. dorsettensis* are indeed smaller than Atlantic ones, but their body proportions are quite similar.

In addition to the differences in length of legs and carapace spines between Mediterranean specimens of *I. dorsettensis* and *I. parvirostris*, our material suggests that the latter species tends to have a larger interantennular spine, with a broader sinus between that spine and the rostral teeth, and in having a larger distal spine or projection on the basal antennal segment; this distalmost projection usually is visible in dorsal view in *I. parvirostris*. These features may well prove to be too variable to help in distinguishing these species.

One of the reasons that *I. parvirostris* has not been recognize as a species distinct from *I. dorsettensis* until now is that earlier workers did not recognize that the latter is represented by more than one taxon in the Mediterranean. Actually, three species similar to *I. dorsettensis* occur in the Mediterranean: *I. communissimus* Rizza, 1839, a large, shallow-water species (and probably the most abundant of the three species there) (see FOREST 1965); *I. dorsettensis* (Pennant, 1777), and *I. parvirostris* (Risso, 1816).

Our material of *I. parvirostris* generally comes from deeper water than does that of *I. dorsettensis*, but we lack enough material to determine the depth ranges of the two species. Generally, *I. dorsettensis* is found in depths shallower than 70 m, whereas *I. parvirostris* occurs in depths beyond 90 m. This is similar to what we

found in two Mediterranean species of *Brachynotus* (see FROGLIA and MANNING 1978) and *Meiosquilla* (see MANNING and FROGLIA 1979).

Inachus parvirostris resembles a small, long-legged, deep-water species recently described off West Africa, *Inachus grallator* Manning and Holthuis (1981, p. 287, figs. 73, 74), and the two species could prove to be conspecific. However, as shown by those authors, several species thought by earlier workers to occur both in the Mediterranean and off tropical West Africa actually were represented by distinct species in the two areas. A comparison of material of these species should be made when large series are available from each area.

Inachus complectens (Rathbun, 1911) from the Indian Ocean (see GRIFFIN 1974, p. 18, and MANNING and HOLTHUIS 1981, p. 290) is a larger, spinier species, with relatively shorter, heavier legs. A redescription of this species, synonymized with *I. dorsettensis* by GRIFFIN, is in preparation by one of us (R.B.M.).

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