

Parvipalpus onubensis*, a new species (Crustacea: Amphipoda: Caprellidea) from the Atlantic coast of Southern Spain

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SUMMARY: *Parvipalpus onubensis* n. sp. is described based on the specimens collected from sediments on the coast of Huelva (Southwest Spain). The new species is compared with the other species in the genus: *Parvipalpus capillaceus* (Chevreux, 1887), *P. linea* Mayer, 1890 and *P. major* Carausu, 1941. *Parvipalpus onubensis* differs from the remaining species of *Parvipalpus* by the simultaneous combination of the following characters: small size (body length up to 2.8 mm), rostrum present, body completely smooth, flagellum of antenna 1 with 5 articles in males and 3 in females, mandibular palp 2-articulate, incisor and lacinia mobilis 4-toothed and penes well developed.

Key words: Crustacea, Amphipoda, Caprellidea, *Parvipalpus onubensis*, new species.

INTRODUCTION

An annual research programme on sediment communities from the coast of Andalucía (Southern Spain) was initiated during July-September 2000. The project, supported by the Environmental Agency of the Andalusian Government, is focused on the environmental control of the littoral zone based on the macrofaunal communities and their relationships with the abiotic variables.

As a first result of this research program, several specimens of the genus *Parvipalpus* were found on the coast of Huelva (Atlantic coast of Southern Spain). A detailed examination revealed that these specimens belong to a new species, here-by described as *Parvipalpus onubensis*.

More than 25 species of the Caprellidea have been collected along the Iberian Peninsula (unpublished data). Only five of these species have been reported from soft bottoms (*Caprella acanthifera* Leach, 1814; *Pariambus typicus* Kröyer, 1814; *Phtisica marina* Slabber, 1769; *Pseudolirius kröyeri* (Haller, 1897) and *Pseudoprotella phasma* (Montagu, 1804)). Furthermore, two new species, *Caprella pseudorapax* and *C. sabulensis*, have been recently described from sediments collected at the coastline Algeciras-Tarifa and Ceuta on the Mediterranean Coast of the Strait of Gibraltar (Guerra-García *et al.*, in press.).

The type specimens (holotype, allotype and some paratypes) have been deposited in the Museo Nacional de Ciencias Naturales de Madrid, Spain (MNCN 20.04/5310).

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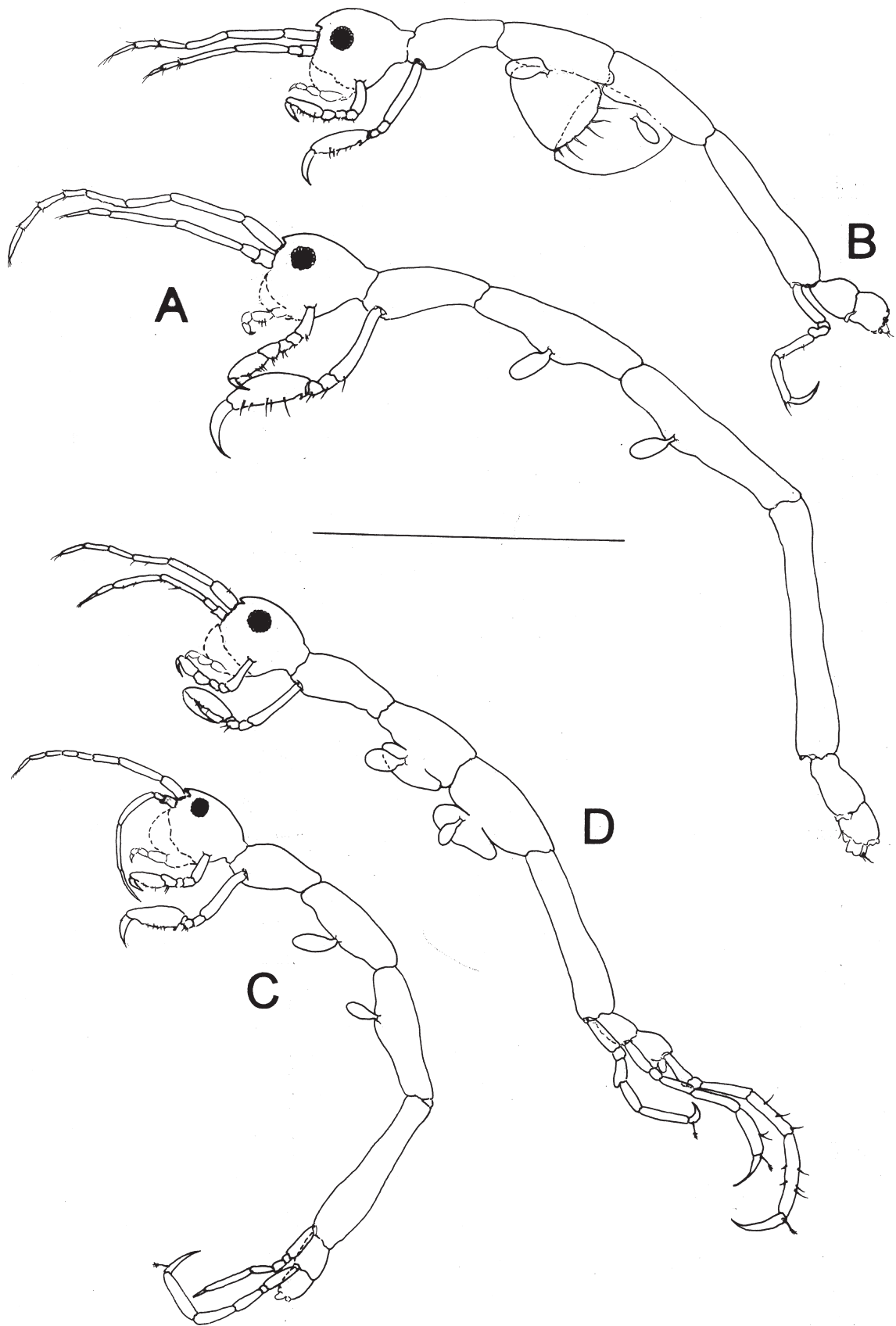


FIG. 1. – *Parvipalpus onubensis* n. sp. Lateral view. A, mature male (holotype); B, mature female (allotype); C, juvenile male; D, premature female. Scale bar: 1 mm.

Benthic sediment samples were collected with a Van Veen grab (0.05 m²). The samples were sieved through a 0.5 mm mesh and the infauna was preserved in 5% buffered-formalin containing Rose Bengal solution to ease sorting. Granulometry of the sediment was determined by Buchanan and Kain's method (Buchanan and Kain, 1984). Sediment organic matter (%) was analysed by ashing to 500°C (mean value for three replicates per sample). For microscopical study, caprellid specimens were dissected under a stereomicroscope. Permanent mounts were made in polyvinyl lactophenol. All figures were drawn with the aid of a camera lucida.

Family CAPRELLIDAE White, 1847
 Genus *Parvipalpus* Mayer, 1890
Parvipalpus onubensis n. sp.
 (Figs. 1-4)

Type material: Holotype male, 2.8 mm. in length from sediment (37°8.43'N, 07°12.03'W), Huelva, southwest Spain, 22 August 2000, 20 meters in depth. Allotype female, 2.33 mm, collected together with holotype. Paratypes: 3 mature males, 5 mature females, 1 juvenile male, 1 premature female, 1 juvenile, collected together with holotype; 4 mature females from sediment (37°06.66'N, 07°19.30'W), Huelva, 23 August 2000, 20 meters in depth.

Males: average length, 2.73 mm; range, 2.12-2.80.
 Females: average length, 2.31 mm; range, 2.06-2.43.

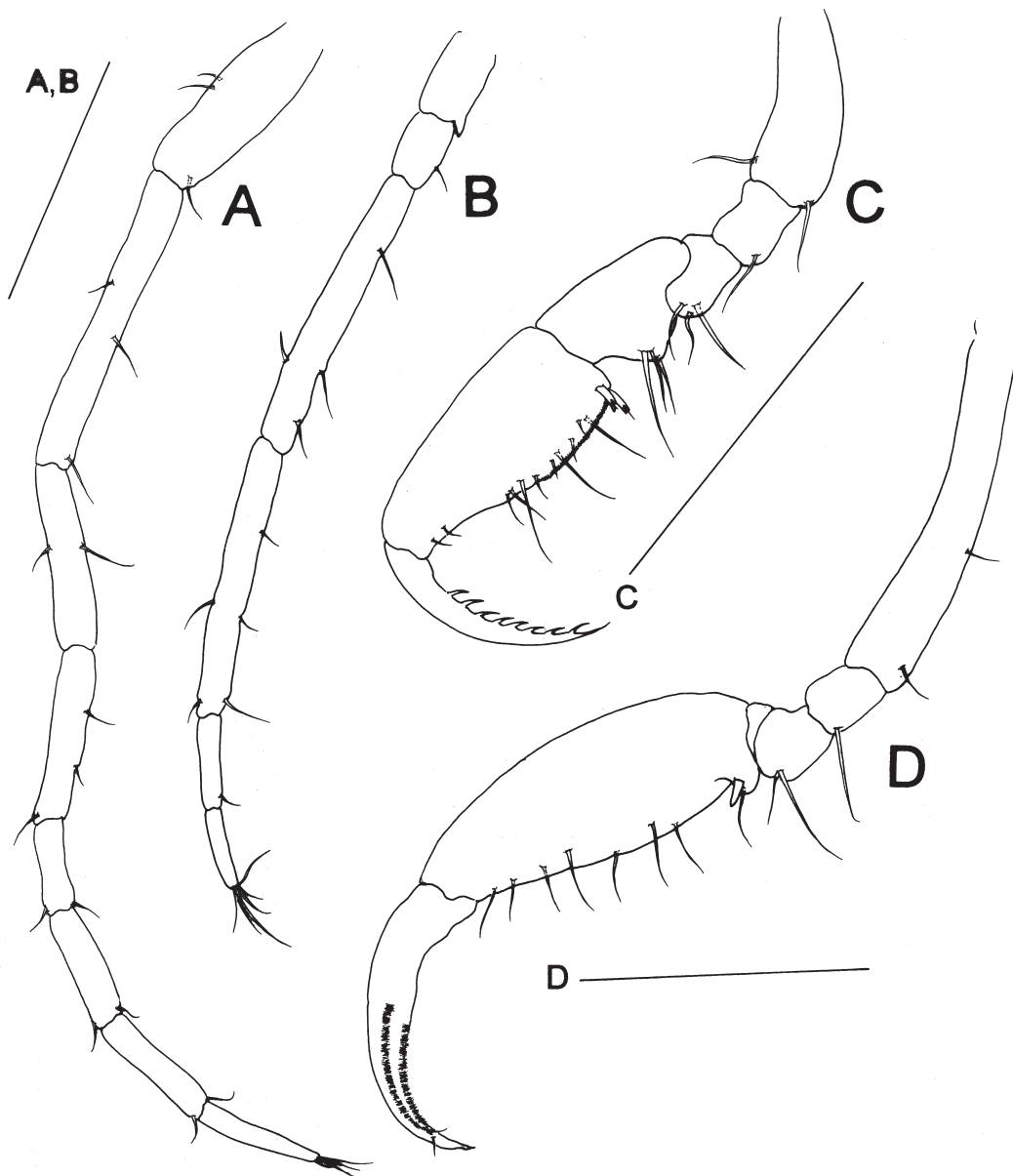


FIG. 2. – *Parvipalpus onubensis* n. sp. Holotype male. A, antenna 1; B, antenna 2; C, gnathopod 1; D, gnathopod 2. Scale bars: 0.2 mm.

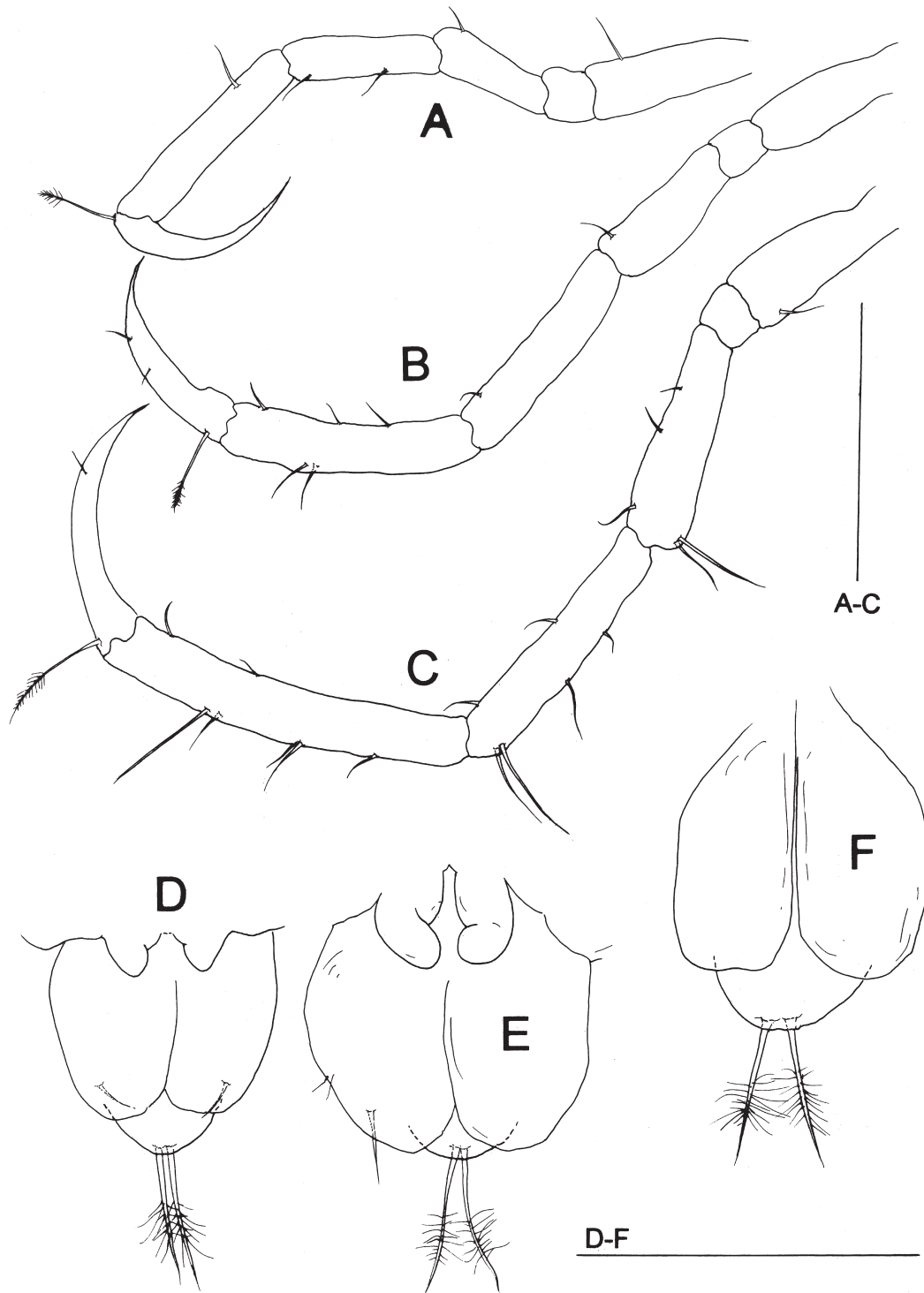


FIG. 3. – *Parvipalpus onubensis* n. sp. A-C, pereopods 5-7 (paratype female); D, abdomen, ventral view (paratype juvenile male); E, abdomen, ventral view (holotype male); F, abdomen, ventral view (allotype female). Scale bars: A-C: 0.2 mm; D-F: 0.1 mm.

Diagnosis: Body completely smooth. Head with an acute rostrum. Flagellum of antenna 1 with 5 articles in males and 3 in females. Antenna 2 flagellum 2-articulate. Basis of gnathopod 2 ca. 3/4 of pereonite 2 in length; palm provided with a proximal tooth located in a round prominence. Pereopods 5-7

scarcely setose, without grasping spines. Mandibular palp 2-articulate. Penes well developed.

Description: Holotype male (undissected), 2.8 mm in length. Body smooth. Head with a small acute rostrum. Eyes large and distinctive. Pereonite

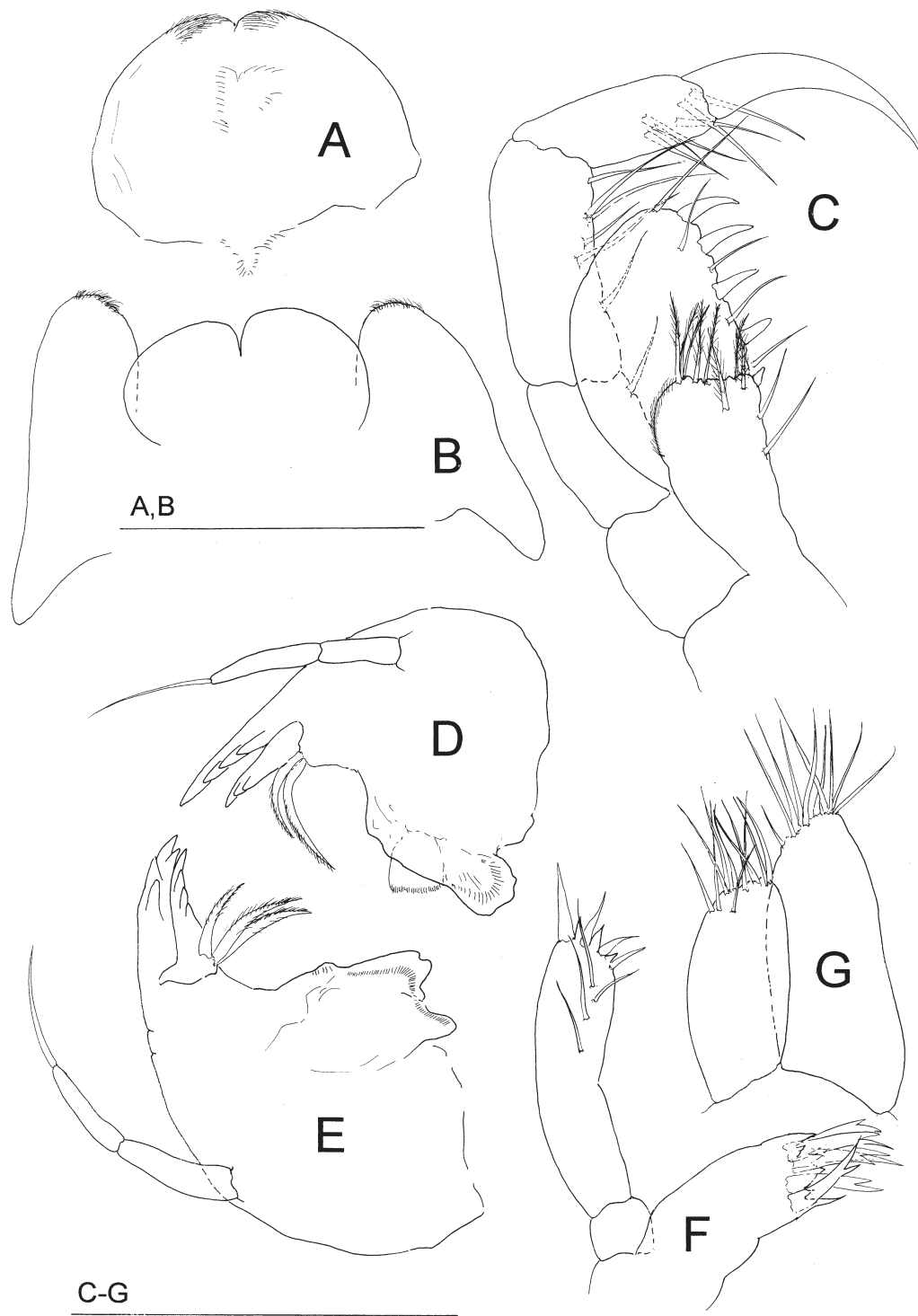


FIG. 4. – *Parvipalpus onubensis* n. sp. Paratype female. A, upper lip; B, lower lip; C, maxilliped; D, right mandible; E, left mandible; F, maxilla 1; G, maxilla 2. Scale bars: 0.1 mm.

2, 3 and 4 increasing in length respectively, pereonites 6 and 7 short. Gills elongate, length ca. 2.5 times width.

Antenna 1 about 1/3 of body length; flagellum 5-articulate.

Antenna 2 about 2/3 length of antenna 1; peduncular articles 3 and 4 subequal in length; swimming setae absent; flagellum 2-articulate.

Gnathopod 1 basis a little shorter than ischium to carpus combined; carpus elongate, as long as pre-

ceding 2 articles together; propodus twice as long as width, palm convex, serriform, with a pair of grasping spines near proximal end; dactylus provided with long, acute denticules.

Gnathopod 2 inserted in the anterior half of pereonite 2; basis ca. 3/4 of pereonite 2 in length; carpus short, ca. 1/3 of merus in length; ischium cylindrical; palm of propodus scarcely setose, provided with a proximal tooth located in a round prominence.

Penes located medially, well developed and curved at the middle, length ca. 3 times width. Abdomen without appendages; a single dorsal lobe with 2 large plumose setae.

Pereopods are missing in holotype. Mouthparts and pereopods are, therefore, described from a paratype (female).

Pereopods 5-7 increasing in length respectively; palm of propodus without grasping spines; dactylus carrying a long plumose seta on proximal end.

Mouthparts: Upper lip symmetrically bilobed, pubescent apically. Inner lobes of the lower lip almost fused; outer lobes finely setose on distal part. Inner lobe of the maxilliped rectangular and distally expanded, carrying a row of plumose setae and a tooth; outer lobe, twice as long as inner one, provided with 4 teeth and 5 simple setae; palp 4-articulate, articles 2 and 3 setose. Mandibular palp 2-articulate, carrying a strong seta distally; incisor and lacinia mobilis 4-toothed; a row of 3 plumose setae on left mandible and 2 on the right one; molar well developed; molar flake, present in the right mandible, rounded. Maxilla 1 outer lobe with 6 forked teeth distally; palp 2-articulate, the distal one with 4 teeth setae and 3 spiniform teeth; a row of 4 setae on lat-

eral face. Maxilla 2 inner and outer lobes oval, carrying simple setae on end; outer lobe a little longer than inner lobe.

Allotype female, 2.33 mm in length. Flagellum of antenna 1 with 3 articles. Oostegite 3 setose on anterior margin. Gnathopod 1 and 2 similar to those in male.

Etymology: The specific name *onubensis* refers to "Onuba" the roman name of Huelva, the type locality.

Intraspecific morphological variation: The number of articles in the flagellum of antenna 1 is a constant character in all mature males (5) and females (3) studied.

DISCUSSION

The genus *Parvipalpus* was established by Mayer (1890) who described *Parvipalpus linea* Mayer 1890, collected from Italy, as the type species, and included *Aegina capillacea* Chevreux, 1888, found on French Atlantic coasts, in the genus *Parvipalpus* as *Parvipalpus capillaceus* (Chevreux, 1888). After McCain and Steinberg (1970), *Parvipalpus linea* could be a synonym for *Parvipalpus capillaceus*, although recently Laubitz and Sorbe (1996) considered *P. capillaceus* as a valid species. *Parvipalpus linea* was redescribed in detail by Cavedini (1981).

Carausu (1941) described *Parvipalpus major* on the basis of the specimens collected from the

TABLE 1. – Comparison of selected characteristics among *Parvipalpus onubensis* n. sp and the other species in the genus: *P. capillaceus* (Chevreux, 1888), *P. linea* Mayer, 1890 and *P. major* Carausu, 1941.

| | <i>P. capillaceus</i> | <i>P. linea</i> | <i>P. major</i> | <i>P. onubensis</i> n. sp |
|--|------------------------------|------------------------------|--|------------------------------|
| Body length (maximum) | 7 mm | 10 mm | 29 mm | 3 mm |
| Ornamentation | Body smooth | Body smooth | Pereonites 1-7 with rows of tubercles in females. Pereonites 5-7 with tubercles in males | Body smooth |
| Axillary tooth near the insertion of gnathopod 2 | Present | Present | Absent | Absent |
| Rostrum | Absent | Absent | Present | Present |
| Articles in the flagellum of antenna 1 | 9(males), 5(females) | 7-9(males), 5(females) | 22(males), 12(females) | 5(males), 3(females) |
| Articles in the flagellum of antenna 2 | 3 | 3 | 2 | 2 |
| Carpus of gnathopod 1 | Normal | Normal | Distally slim | Normal |
| Mandibular palp | 3-articulate, 2 apical setae | 2-articulate, 1 apical setae | 3-articulate, 2 apical setae | 2-articulate, 1 apical setae |
| Incisor | 8-toothed | 5-toothed | 5-toothed | 4-toothed |
| Lacinia mobilis | 5-toothed | 5-toothed | 5-toothed | 4-toothed |
| Penes | Short | Short | Short | Large |

Mediterranean coast of France and Monaco. This species, considered traditionally as a Mediterranean endemism (Krapp-Schickel, 1993) had not been reported since its original description until Laubitz and Sorbe (1996) collected it in deep-water samples from the Southern Bay of Biscay (Atlantic Ocean) and redescribed the species.

The four species of *Parvipalpus* described so far (*P. capillaceus*, *P. linea*, *P. major* and *P. onubensis*) are compared in Table 1. *Parvipalpus onubensis* differs from the remaining species mainly in the body length, in the number of flagellar articles of antenna 1, in the incisor and lacinia mobilis and the penes.

The specimens of *P. onubensis* were collected in gross sand (according to Buchanan and Kain (1984)) with abundant biodebris remains and low values of the organic matter (lower than 2%). The crustacean community of the bottoms where the new species was found was dominated by the gammaridean amphipods *Ampelisca* sp, *Dexamine spinosa* (Montagu, 1813), *Harpinia* sp, *Melita palmata* (Montagu, 1804), *Photis longipes* (Della Valle, 1893) and *Pontocrates arenarius* (Bate, 1858) and the decapods *Callinassa* sp and *Liocarcinus* sp. Another two caprellid species were found living together with *P. onubensis*: *Phtisica marina* Slabber, 1769 and the recently described *Caprella sabulensis* Guerra-García *et al.* (in press), which extends its distribution to the Atlantic Ocean with the present paper.

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