



Redescription and first record of *Camacho faroensis* Myers, 1998 (Crustacea, Amphipoda) from the continental slope off Galicia (NW Iberian Peninsula)

Ramiro Tato¹ · Juan Moreira² · Victoriano Urgorri³

Received: 24 January 2018 / Revised: 13 March 2018 / Accepted: 14 March 2018 / Published online: 5 April 2018
© Senckenberg Gesellschaft für Naturforschung and Springer-Verlag GmbH Germany, part of Springer Nature 2018

Abstract

This paper reports the southernmost record of *Camacho faroensis* Myers, 1998 (Crustacea: Amphipoda: Aoridae) from samples collected at the continental slope (Ferrol Canyon) off the NW Iberian Peninsula during the DIVA-Artabria I expeditions. This species was initially described from the Faroe Islands but type specimens are incomplete and lack relevant features (e.g., antenna 1, pereopod 5). Therefore, a detailed redescription and drawings are provided based on examination of the type series and the new material collected. To date, the genus *Camacho* Stebbing, 1888 is composed of three species being *C. faroensis* as the only one reported so far from the Northern Hemisphere. This species is characterized by the following characters: absence of eyes, cephalic lobes reduced, presence of two ventral spines on peduncle article 1 distal margin of antenna 1, presence of spines (stout setae) on pereopods 5–7, reduced inner rami of uropod 3, and lacking distal setae. A key for all recognized species of the genus is also included.

Keywords Crustacea · Amphipoda · *Camacho faroensis* · NE Atlantic · Continental slope · Hard bottoms

Introduction

Over the last 20 years, several studies have focused on the deep-sea peracarid fauna of the Iberian Peninsula including the Mediterranean (e.g., Cartes and Sorbe 1993, 1999; Almeida et al. 2016) and the Atlantic margins (Bay of Biscay: Bachelet et al. 2003; Guerra-García et al. 2008; Sorbe et al. 2010; continental Portugal: Marques and Bellan-Santini 1991; Cunha et al. 1997; Gulf of Cádiz: Błazewicz-Paszkowycz et al.

2011; Esquete and Cunha 2017). However, the Galician coast (NW Iberian Peninsula) has been comparatively less studied.

In 2002 and 2003, the Marine Biology Station of A Graña (University of Santiago de Compostela, Spain) carried out the DIVA-Artabria I sampling expeditions that aimed to study the diversity of the deep-sea benthic fauna of the shelf and slope off the NW Iberian Peninsula (e.g., Moreira and Parapar 2008; Parapar and Moreira 2008, 2009; Señaris et al. 2014, 2016; Zamarro et al. 2016). Concerning the Amphipoda, 30 families and 122 species were identified from samples taken in these expeditions (Tato 2015) and two new species have already been described (Tato and Moreira 2017).

Worldwide, the family Aoridae constitutes a complex group with 25 genera and 253 species; many of those have lately been reassigned to other genera. For instance, about 32 species belonging to *Lembos* Bate, 1857 have been transferred to other taxa. Identification is usually complicated, as many genera differ from each other in features such as the molar processes (Myers 1988), or the shape and length of the peduncle article 3 of the mandible (Ariyama 2004); these amphipods are usually quite fragile and during collection and sorting tend to lose the antennae and pereopods, making identification very difficult.

Communicated by S. S. M. Kaiser

✉ Ramiro Tato
ramiro.tato@usc.es

- ¹ Estación de Biología Mariña da Graña, Universidad de Santiago de Compostela, Casa do Hórreo, Rúa da Ribeira 1, A Graña, 15590 Ferrol, Spain
- ² Departamento de Biología (Zoología), Universidad Autónoma de Madrid, Campus de Cantoblanco, 28049 Madrid, Spain
- ³ Departamento de Zooloxía e Antropoloxía Física, Facultade de Biología, Universidade de Santiago de Compostela, 15782 Santiago de Compostela, Spain

The aorid genus *Camacho* Stebbing, 1888 comprises three species: two recorded from the Southern Hemisphere (*C. bathyplous* Stebbing, 1888 and *C. nodderi* Coleman and Lörz, 2010) and one from Northeast Atlantic: *C. faroensis* Myers, 1998. The latter was described from the Faroe Islands from specimens collected at 1003 m; the type material was composed of several males and females all lacking the pereopod 5 and most of the articles of antenna 1. Examination of samples from the DIVA-Artabria I expeditions has revealed the presence of several specimens of *C. faroensis* in good conditions, many preserving all appendages. This finding constitutes the southernmost record of the species. Therefore, we here provide a redescription of *C. faroensis* after re-examination of the type series that is complemented with a detailed description of the Iberian specimens. An identification key to all species of the genus *Camacho* is also included.

Materials and methods

The DIVA-Artabria I project was conducted during September 2002 and 2003 onboard the R/V *Mytilus* (Consejo Superior de Investigaciones Científicas, CSIC). Sampling stations were located along a transect from the Ártabro Gulf (100 m) to the Ferrol Canyon (1000 m). Samples were taken using three different gears depending on the bottom composition: epibenthic sledge (EBS), Agassiz trawl (AT), and naturalist dredge (DRN). Specimens were fixed in 4% formalin mixed with seawater. After fixation, fauna was sorted from the samples and preserved in ethanol 70% buffered with borax.

Amphipods were sorted and identified using a stereoscopic microscope Olympus SZ40 and an optic microscope Olympus CX41. Dissection of the specimens was done using tungsten needles. Line drawings were done with an optic microscope BX51 connected to a camera lucida; the digitalization software package was Adobe Illustrator CS6 and Corel Draw X7 with a pen tablet Wacom Intuos Pro M. Body length measures were taken from the distal part of the head to the posterior end of urosomite 3.

Type material examined was borrowed by the Zoological Museum of Copenhagen (ZMUC). New material examined from the DIVA-Artabria expeditions is deposited in the Museo de Historia Natural of the Universidad de Santiago de Compostela (MHNUSC).

Results

Order Amphipoda Latreille, 1816.

Suborder Senticaudata Lowry and Myers, 2013.

Infraorder Corophiida Leach, 1814.

Parvorder Corophiidira Leach, 1814.

Superfamily Aoroidea Stebbing, 1899.

Family Aoridae Stebbing, 1899.

Genus *Camacho* Stebbing, 1888.

Camacho faroensis Myers, 1998.

Diagnosis Head twice as long as pereonite 1, with short pointed cephalic lobes, and eyes absent. Antenna 1 peduncle article 1 with 1–2 ventral subterminal stout setae; antenna 1 slightly longer than antenna 2. Gnathopods alike, gnathopod 1 bigger than gnathopod 2 but both close in size; gnathopod 2 palm oblique. Pereopod 5 very reduced but much stouter than pereopods 6–7; basis long and broad; stout spine-like setae present on basis, merus, carpus, and propodus. Pereopods 6–7 longer than 5, very similar with variable setation. Epimeral plates rounded, with a few small ventral setae (Fig. 1g). Urosome segments dorsally angulose. Uropods biramous; uropod 1 peduncle subequal in length to rami with strong distoventral inter-ramal tooth or process; uropod 2 length not the exceeding end of uropod 1 rami; uropod 3 reduced; rami very short; and inner ramus shorter than outer. Telson short and broad with two dorsal keels, each one with a subterminal seta. Female oostegites (Fig. 1e) present on coxae 2–6, elongated and widening distally, with numerous simple long setae. Gills located in segments 2–6 and slender and distally rounded (Fig. 1f).

Material examined

Type series Holotype: ♂, 3.2 mm long (ZMUC CRU2381) BIOFAR station 261, Faroe Islands, 1003 m depth, 14 May 1988, 61° 35' 57" N, 009° 35' 47" W. Paratypes: 30 ♂♂, 36 ♀♀, three juveniles (ZMUC CRU2382), BIOFAR station 261, 14 May 1988, 61° 35' 57" N, 009° 35' 47" W.

DIVA-Artabria I material: 1 ♂, 4.3 mm long, 3 ♀♀, 2–3 mm long (MHNUSC 25051), station AT-03-1000, 16 September 2003, 43° 53' 51" N, 008° 57' 20" W, 1005 m depth, rocky bottoms. 1 ♀, 3.2 mm long, 169 incomplete or immature specimens, 1.7–5 mm long (MHNUSC 25052), station AT-02-800, 11 September 2002, 43° 53' 27" N, 008° 48' 28" W, 800 m depth, rocky bottom. 3 ♂♂, 1.3–2.9 mm long, 6 ♀♀, 1.5–3.4 mm long (MHNUSC 25053), station DRN-03-600, 18 September 2003, 43° 48' 26" N; 008° 51' 27" W, 600 m depth, rocky bottoms.

Description

Head Two times longer than pereonite 1 with short slightly rounded cephalic lobes; eyes absent (Fig. 1a).

Antenna 1 Peduncular article 1 with two pairs of stout setae and distal pappose setae on ventral margin (Fig. 1b, c); article 2 long and narrow, about 1.5 times length of article 1, with

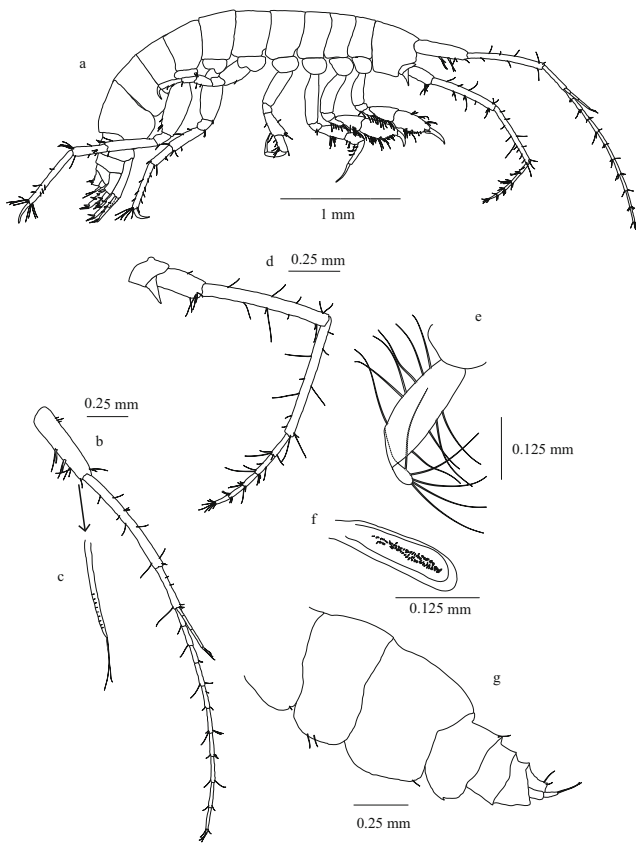


Fig. 1 *Camacho faroensis*. Adult ♂, DIVA-Artabria I, AT-03-1000. **a**: Entire specimen, lateral view. **b**: Antenna 1. **c**: Antenna 1, article 1, terminal seta. **d**: Antenna 2. **e**: oostegite (detail). **f**: gill (detail). **g**: epimeral plates and urosome

proximal and distal setae along anterior and posterior margins; and article 3 about 3 times longer than broad, with two small proximal setae on anterior margin and distal setae on anterior and posterior margins. Flagellum 11-articulate, each one with distal short setae; accessory flagellum 4-articulate; and article 4 very reduced with terminal setae.

Antenna 2 Peduncle article 1 is unknown; article 2 short and broad, with ventral gland cone; article 3 about two times longer than broad with a ventral notch of distal setae and a medial anterior seta; article 4 long and narrow, much longer than article 3, with proximal and distal setae along anterior and posterior margins; and article 5 long and narrow, about as long as article 4 (Fig. 1d). Flagellum 6-articulate, each one with terminal setae; article 6 minute and densely covered by setae.

Mouthparts Mandibles alike; left mandible (Fig. 2a) developed, with incisor and lacinia mobilis visible. Molar rounded and spine row present under lacinia mobilis (Fig. 2c). Mandibular palp with three articles: article 1 short and naked; article 2 long and narrow, longer than article 3, and with four setae on posterior margin; and article 3 ovate, with long

plumose and comb-like terminal setae (Fig. 2b). Maxilla 1 inner plate with a single short seta and an outer plate with eight compound terminal spines (Fig. 2d–f); palp 2 articulate, article 2 the longest, with 2–4 terminal spines and a subterminal pappose seta (Fig. 2g). Maxilla 2 plates rounded with terminal setae; inner plate with mediofacial setae on inner margin (Fig. 2h). Maxilliped inner plate with four terminal spines and plumose subterminal setae (Fig. 2i–k); outer plate reaching two thirds of palp article 2, distal margin with seven spines and pappose and cuspidate stout setae (Fig. 2l). Maxilliped palp 4-articulate, with numerous plumose and pappose setae on articles 2–4. Lower lip bilobed; inner margins of lobes covered with dense short setae (Fig. 2m).

Gnathopod 1 Gnathopod subchelate, slightly longer than gnathopod 2; coxal plate reduced, subquadrate, with short setae along ventral margin (Fig. 3a, b). Basis elongated and wider distally. Ischium short and broad with distal posterior setae. Merus longer than ischium, with a row of ventral setae under insertion of carpus. Carpus wider distally, with numerous long setae along ventral margin and several medial setae. Propodus ovate, palmar margin convex with setae along ventral and dorsal margins and six mediofacial setae. Dactylus slightly curved, with short setae on posterior margin; posterior margin with three small denticles and nail absent.

Gnathopod 2 Articles, except propodus, similar in size and shape to gnathopod 1 (Fig. 3c, d). Coxal plate reduced, with three short setae on ventral margin. Basis elongated, three times longer than broad; with two setae along posterior margin and one seta on anterior margin. Ischium short and broad, with one distal seta on posterior margin. Merus longer than ischium with setae on ventral margin. Carpus triangular, inserted on merus dorsal margin; ventral margin densely covered with long setae; two subterminal setae on dorsal margin. Propodus palmar angle slightly more pronounced than in gnathopod 1; dorsal and ventral margins almost parallel; ventral margin covered with setae and one mediofacial stout setae; dorsal margin with two rows of setae on distal half. Dactylus curved, about as long as palmar margin, with three short setae and two small denticles on posterior margin.

Pereopod 3 Coxal plate reduced, rounded, with short setae on ventral margin (Fig. 3e). Basis elongated, with two posterior setae, two anterior medial setae, and a distal posterior single seta. Ischium short and broad with a distal ventral seta. Merus two times longer than broad with three ventral setae, two medial dorsal setae, and two subterminal dorsal setae. Carpus only slightly longer than broad, with numerous ventral setae and one terminal seta on dorsal margin. Propodus elongated and slightly curved, broader proximally, with three posterior setae and one medial anterior seta. Dactylus curved,

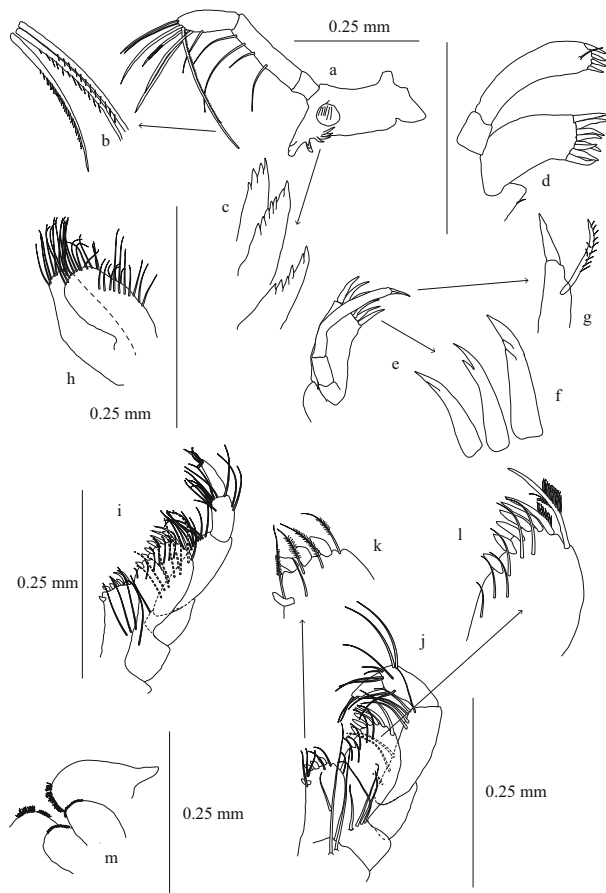


Fig. 2 *Camacho feroensis*. Adult ♂, DIVA-Artabria I, AT-03-1000 (a–m, excluding d and i); ♂, paratype ZMUC CRU2382 (d, i). **a**: Left mandible. **b**: Mandibular palp, article 3, terminal setae (detail). **c**: Mandible, molar spine (detail). **d**: Maxilla 1. **e**: Maxilla 1. **f**: Maxilla 1, terminal spine (detail). **g**: Maxilla 1, palp (detail). **h**: Maxilla 2. **i**: Maxilliped. **j**: Maxilliped. **k**: Maxilliped, inner plate (detail). **l**: Maxilliped, outer plate (detail). **m**: Lower lip

subequal in length to propodus, with one proximal seta on anterior margin and without nail.

Pereopod 4 Similar to pereopod 3 in size and shape (Fig. 3f).

Pereopod 5 Coxal plate shallow, ventral margin bilobed, with a single seta directed backwards (Fig. 4a). Basis well-developed, about two times longer than broad, with stout setae on anterior margin and a few short setae on both anterior and posterior margins. Ischium short and broad, with a single distal seta on posterior margin. Merus longer than ischium; about two times longer than broad, with a small distal lobe on posterior margin; with one proximal seta on posterior margin, distal setae on both margins, and a mediofacial terminal stout setae. Carpus about as long as merus but narrower, with two distal setae on posterior margin, two medial stout setae,

and three terminal stout setae on anterior margin. Propodus long and narrow, about three times longer than broad, with one medial and two terminal setae on posterior margin and four stout setae along anterior margin. Dactylus reduced and curved; about one third of propodus, naked, and without nail or setae visible.

Pereopod 6 Coxal plate reduced, shallow, and ventral margin bilobed (Fig. 4b). Basis long and broad, slightly narrowing distally, with a few short proximal and medial setae on posterior margin and short setae on distal margin. Ischium short and broad with three short distal setae on anterior margin. Merus elongated, about three times longer than broad with short setae on second half of anterior margin, longer setae along posterior margin, and terminal setae on both margins. Carpus shorter and narrower than merus, with one medial stout seta on posterior margin, two distal stout setae on posterior distal margin, and long distal setae on both distal margins. Propodus elongated and narrow, with five thin spine-like setae along anterior margin, two short setae on posterior margin, and notches of long setae near dactylus insertion. Dactylus short and curved, naked, and without visible nail.

Pereopod 7 Larger than pereopod 6; coxal plate similar to pereopod 6, reduced and shallow, and ventral margin weakly bilobed (Fig. 4c). Basis broad and long, with seven setae along posterior margin and a stout medial seta on anterior margin. Ischium short and broad with a single distal seta on anterior margin. Merus elongated, about four times longer than broad, with simple setae along posterior and anterior margins and terminal setae on distal end. Carpus elongated, about two times longer than broad with one thin medial stout seta on posterior margin, one medial seta on anterior margin, and terminal setae. Propodus very long and narrow, with six thin spines along anterior margin and short setae on posterior margin; distal margin densely covered with long setae. Dactylus curved, about one third length of propodus, naked.

Uropod 1 Peduncle elongated, subequal in length to rami, with two stout dorsal spines and one thin subterminal spine; acute inter-ramal process present, almost reaching half-length of rami (Fig. 4d). Rami subequal in length; outer ramus with row of three dorsal spines and three terminal stout spines; inner ramus with row of two dorsal spines and four distal stout spines.

Uropod 2 Peduncle elongated, broader proximally, with one distal stout seta (Fig. 4e). Outer ramus shorter than peduncle and inner ramus, with one dorsal spine and

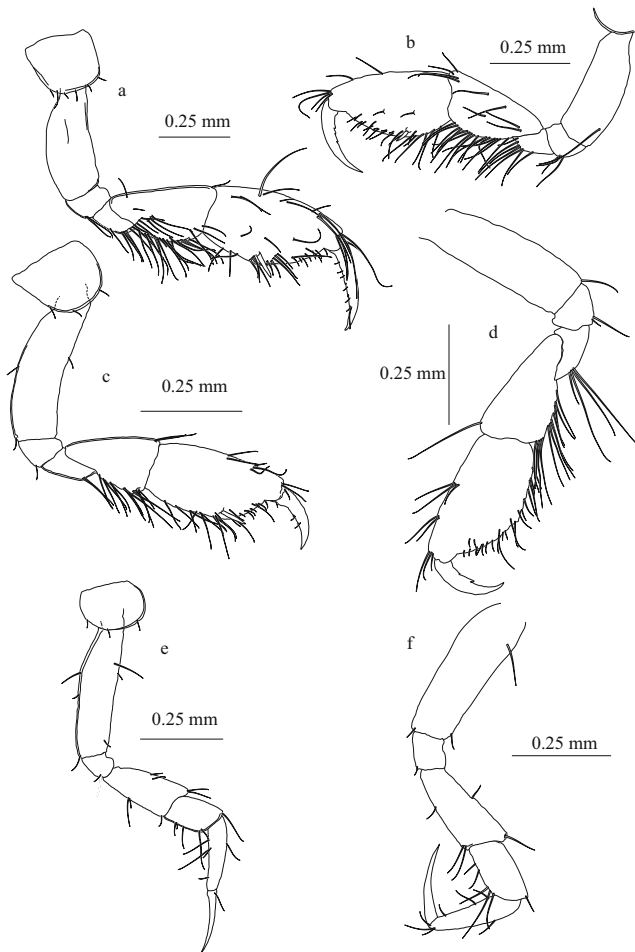


Fig. 3 *Camacho faroensis*. Adult ♂, DIVA-Artabria I, AT-03-1000 (a, c, e, f), paratype ZMUC CRU2382 (b, d). a: Gnathopod 1. b: Gnathopod 1. c: Gnathopod 2; d: Gnathopod 2. e: Pereopod 3. f: pereopod 4

three terminal spines; inner ramus almost two times longer than outer and subequal to peduncle, with two paired dorsal spines and three terminal spines.

Uropod 3 Peduncle short and broad and naked (Fig. 4f). Outer ramus about equal length to peduncle, conical, with two long terminal setae, double the length of the ramus; inner ramus shorter than outer, reduced, with the terminal setae about equal to ramus.

Telson Entire, with two dorsal keels ending in two pointed apices, each one with a single seta before apex (Fig. 4g, h).

Sexual dimorphism The only differences observed were the slightly more developed gnathopod 1 in males.

Intraspecific variation The DIVA-Artabria material consisted of specimens with a larger range of sizes than those of the type

series. The number and density of setae in some appendages and the number of terminal spines (3–4) on uropods 1 and 2 showed differences among specimens depending on the size and developmental stage.

Discussion

Ecology and distribution

Camacho faroensis is the only species of the genus recorded yet from the Northern Hemisphere. The other two species of the genus, i.e., *C. bathyplous* and *C. nodderi*, have been only reported from the Southern Hemisphere (South Africa and New Zealand, respectively; Fig. 5). The DIVA-Artabria specimens were found on rocky bottoms at depths of

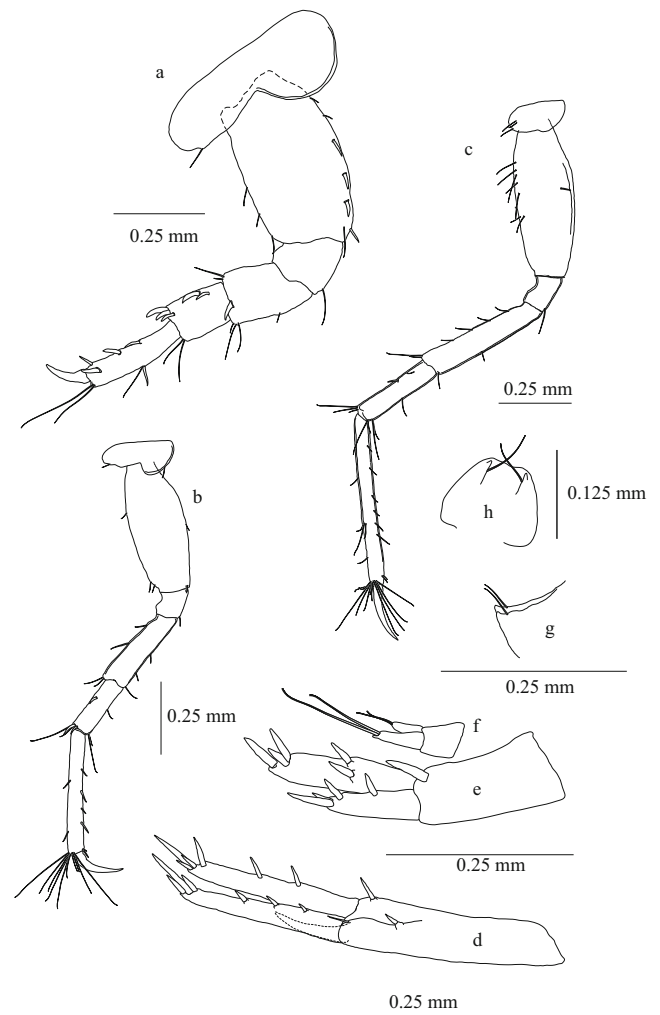


Fig. 4 *Camacho faroensis*. Adult ♂, DIVA-Artabria I, AT-03-1000. a: Pereopod 5. b: Pereopod 6. c: Pereopod 7. d: Uropod 1. e: Uropod 2. f: uropod 3. g: Telson, dorsal apices. h: Telson, dorsal view

600 to 1000 m in the Ferrol Canyon (continental slope off Galicia, NW Iberian Peninsula; Fig. 5). The sediment type for the type locality is unknown (Nørrevang et al. 1994) but the depth range agrees with that of the DIVA-Artabria samples. This record extends therefore the known distribution of *C. faroensis* south to the Atlantic margin of NW Iberian Peninsula.

Species remarks

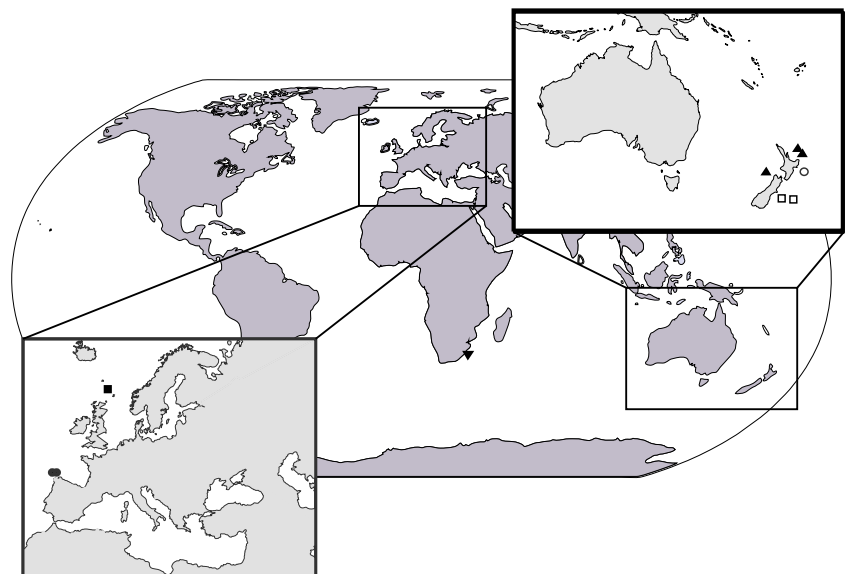
The type series was mostly composed of incomplete specimens; the holotype was damaged and very fragile while the paratypes were also in bad condition or incomplete compared with the DIVA-Artabria material. However, examination of remnant appendages and structures such as antenna 2, gnathopods, mouthparts, and uropods in adult individuals confirmed the identity of the DIVA-Artabria specimens as *C. faroensis*. In order to preserve the conditions of the type series, the authors decided to redescribe the species using the DIVA-Artabria samples, redrawing only certain parts of the type material. The type series and the DIVA-Artabria samples only differ in the presence or absence of some features. For instance, antenna 1 is missing in the type material and the description of the single article present (peduncle article 1) does not mention the distal spines found in the DIVA-Artabria material. Although the DIVA-Artabria samples showed small differences in the setation density of gnathopods and some mouthparts as the maxilliped, these small morphological differences are likely to be due to intraspecific

variation. On the other hand, *C. faroensis* differs from *C. nodderi* in the lack of eyes and the relative length of the antennae among other morphological characters (Table 1). *C. bathyplous* differs in the length of antenna 1 peduncle article 1, the shape of the head and the size and shape of gnathopods and pereopod 5; in addition, this species also differs in the relative length of the rami of uropod 3 as well as in having fewer pereonites with oostegites (Myers 1998).

However, the taxonomic status of *C. bathyplous* is conflictive. Stebbing (1888) described this species from samples taken at depths of 2000 m; later, he expanded the description after examination of new specimens collected at 80-m deep, which had small eyes and 11 articles on the antenna 2 flagellum (Stebbing 1908). After this, Barnard (1961) tentatively described two morphotypes of *C. bathyplous*, respectively, from the Tasman Sea (610 m) and the Kermadec Trench (around 2000 m); specimens from the Tasman Sea strongly resembles to *C. nodderi* while the deeper material was closer to that of the original description of Stebbing (1888). Table 1 shows comparatively the features of the three species of the genus *Camacho* including the material from the Tasman Sea as described by Barnard (1961); the depth range of the latter also resembles that of the type series of *C. bathyplous*. Anyway, we suspect that specimens reported as *C. bathyplous* by Barnard (1961) in the Tasman Sea and Stebbing (Stebbing 1908) in South Africa might represent two undescribed species.

The identification of genera within the family Aoridae is difficult because of the subtle differences

Fig. 5 Global distribution of the species of the genus *Camacho* Stebbing, 1888: empty squares: *C. nodderi* - Coleman and Lörz (2010); empty circles: *C. bathyplous* - Stebbing (1888); filled triangles: *C. bathyplous* - Barnard (1961); filled inverted triangles: *C. bathyplous* - Stebbing (1908). *Camacho faroensis*: filled squares: type series - Myers (1998); filled circles: DIVA-Artabria material



among many of them. The genus *Camacho* is one of the few genera with a longer mandibular palp article 2 compared to the rather straight article 3. Furthermore, this genus has very reduced coxal plates (never overlapping) and gnathopods are alike in both sexes. We provide below a key to the recognized species of the genus *Camacho*. The key also includes the *C. bathyploous* morphotype from the Tasman Sea as described by Barnard (1961).

Key to the species of the genus *Camacho* Stebbing, 1888:

1. Eyes present; uropod 3 outer rami with minute article 2.....2
 Eyes absent; uropod 3 outer rami without minute article 23
2. Eyes well developed; antenna 1 peduncle longer than flagellum, accessory flagellum 7-articulate, coxae 1–4 strongly projected forward, uropod 3 inner rami less than one third of outer rami *C. nodderi* Coleman and Lörz, 2010.

Eyes poorly developed; antenna 1 peduncle shorter than flagellum, accessory flagellum 4-articulate, forward projection of coxae 1–4 less conspicuous, uropod 3 inner rami about one third of outer rami.....
C. bathyploous sensu Barnard (1961).

3. Antenna 1 peduncle article 1 twice longer than head, narrowing distally without stout setae. Uropod 3 inner rami minute, not reaching one third of outer rami..... *C. bathyploous* Stebbing, 1888.

Antenna 1 peduncle article 1 longer than head but not twice and not narrowing distally; with distal stout setae. Uropod 3 inner rami minute but reaching well beyond one third of outer rami..... *C. faroensis* Myers, 1998.

Acknowledgements The authors are grateful to the crew of the R/V *Mytilus* (Consejo Superior de Investigaciones Científicas [CSIC] Spain), to the staff of the Estación de Biología Mariña da Graña (Universidad de Santiago de Compostela) who sorted the samples, and to the staff of the Zoological Museum of Copenhagen (ZMUC) and Museo de Historia Natural of the Universidad de Santiago de Compostela (MHNUSC) for loaning of specimens. The authors also want to thank the comments of three anonymous reviewers who helped to vastly improve this work.

Funding This work is a contribution of the following projects: PGIDT01PX120008PR, PGIDIT05PXIC20001P, PGIDIT07PXB000120PR, A Selva-08, and ForSaGal-09 financed by the Dirección Xeral (I + D + i) from the Xunta de Galicia, and VEM2003-20070-C04-04, CGL2004-22429-E, and CTM2004-00740 financed by the Ministerio de Educación y Ciencia (Spain).

Compliance with ethical standards

Conflict of interest The authors declare that they have no competing interests.

Table 1 Main morphological differences between the species of the genus *Camacho*

	Source	Eyes	A1	Acc. flag.	A2 flag.	Coxae	Oostegites	EP	P3–4 dactylus	P6–7 propodus	U3 rami ratio	Length (mm)	Depth (m)	Localities
<i>C. bathyploous</i> Stebbing, 1888	Stebbing (1888)	Absent/not seen	Unknown	Unknown	Unknown	C1–4 anteriorly pointed	P3–P5; covered with long setae	1–2 rounded	Unknown	Unknown	OR = 3 IR; second minute article absent	8–16	2000	New Zealand
<i>C. bathyploous</i> Stebbing, 1888	Stebbing (1908)	Small but distinct	Unknown	Unknown	11 articles; < peduncle article 5	Unknown	Unknown	Unknown	Much longer than propodus	Pro << dact/car	Unknown	11	80	South Africa
<i>C. bathyploous</i> Stebbing, 1888	Barnard (1961)	Poorly developed but present	A1 ≥ body; A1 >> A2	4 articles	7–8 articles	C1–4 slightly anteriorly pointed	Unknown	1–2 rounded	Subequal than propodus	Pro >> dact/car	OR = 3–4 IR; minute second article present	8	610	Tasman Sea
<i>C. nodderi</i> Coleman and Lörz, 2010	Coleman and Lörz (2010)	Present, oval	A1 = Body; A1 > A2	7 articles	11 articles	Angulose; C1–4 anteriorly pointed	P3–P5; almost naked, with a few short setae	1–2 subquadragular	Shorter than propodus	Pro >> dact/car	OR = 5 IR; minute article 2 present	22	414–657	Chatham Rise (New Zealand)
<i>C. faroensis</i> Myers, 1998	Myers (1998); this work	Absent/not seen	A1 < body; A1 ≥ A2	4 articles	6 articles	C1–4 anteriorly rounded	P2–P6; covered with long setae	1–3 rounded with small ventro-distal setae	Shorter than propodus	Pro >> dact/car	OR = 2 IR; second minute article absent	3.2–4.3	600–1005	Faeroe Islands/NW Iberian Peninsula

A1 antenna 1, *Acc. flag.* accessory flagellum, *A2 flag* antenna 2 flagellum, *C1–4* coxae 1 to 4, *car* carpus; *dact* dactylus; *EP* epimeral plates; *P3–4* pereopods 3 and 4, *P6–7* pereopods 6 and 7, *pro* propodus, *U3* uropod 3

Ethical approval All applicable, national, and/or institutional guidelines for the care and use of animals were followed.

Sampling and field studies All necessary permits for sampling and observational field studies have been obtained by the authors from the competent authorities and are mentioned in the acknowledgements, if applicable.

References

- Almeida M, Frutos I, Company JB, Martin D, Romano C, Cunha MR (2016) Biodiversity of suprabenthic peracarid assemblages from the Blanes canyon region (NW Mediterranean Sea) in relation to natural disturbance and trawling pressure. *Deep Sea Res Pt II* 137:390–403. <https://doi.org/10.1016/j.dsr2.2016.06.019>
- Ariyama H (2004) Nine species of the genus *Aoroides* (Crustacea: Amphipoda: Aoridae) from Osaka Bay, Central Japan. *Publ Seto Mar Biol Lab* 40:1–66. <https://doi.org/10.5134/176318>
- Bachelet G, Dauvin JC, Sorbe JC (2003) An updated checklist of marine and brackish water Amphipoda (Crustacea: Peracarida) of the southern Bay of Biscay (NE Atlantic). *Cah Biol Mar* 44:121–151. <https://doi.org/10.21411/CBM.A.5D3A04B3>
- Barnard JL (1961) Gammaridean Amphipoda from depths of 400–6000 meters. *Galathea Rep* 5:23–128
- Bate CS (1857) A synopsis of the British edriophthalmous crustacea Part. I. Amphipoda *J Nat Hist* (ser. 2). 19(110):135–152. doi: <https://doi.org/10.1080/00222935708697715>
- Błażewicz-Paszkwycz M, Bamber RN, Cunha MR (2011) Apseudomorph tanaidaceans (Crustacea: Peracarida) from mud-volcanoes in the Gulf of Cadiz (North-East Atlantic). *Zootaxa* 2919:1–36
- Cartes JE, Sorbe JC (1993) Bathyal suprabenthic communities of the Catalan Sea (western Mediterranean)—preliminary data on bathymetric distribution and abundance of peracarid Crustacea. *Crustaceana* 64:155–171
- Cartes JE, Sorbe JC (1999) Deep-water amphipods from the Catalan Sea slope (western Mediterranean): bathymetric distribution, assemblage composition and biological characteristics. *J Nat Hist* 33: 1133–1158. <https://doi.org/10.1080/002229399299978>
- Coleman CO, Lörz A-N (2010) A new species of *Camacho* (Crustacea, Amphipoda, Aoridae) from the Chatham rise, N.Z. *Zoosyst Evol* 86: 33–40. <https://doi.org/10.1002/zoos.200900012>
- Cunha MR, Sorbe JC, Bernardes C (1997) On the structure of the coastal suprabenthic communities from the continental shelf off Aveiro (NW Portugal). *Arq Mus Bocage* 3(3):165–188
- Esquete P, Cunha MR (2017) The Apseudomorpha (Crustacea: Tanaidacea) of the Gulf of Cadiz and horseshoe continental rise (NE Atlantic): a taxonomic review with new records, species, and ecological data. *Zootaxa* 4276:61–95. <https://doi.org/10.11646/zootaxa.4276.1.3>
- Guerra-García JM, Sorbe JC, Frutos I (2008) A new species of *Liropus* (Crustacea, Amphipoda, Caprellidae) from Le Danois bank (southern Bay of Biscay). *Org Divers Evol* 7:253.e1–253.e12. doi: <https://doi.org/10.1016/j.ode.2006.04.002>
- Latreille PA (1816) *Nouveau Dictionnaire d'histoire naturelle, appliquée aux arts, à l'Agriculture, à l'Economie rurale et domestique, à la Médecine, Etc. Par une Société de Naturalistes et d'Agriculteurs*. Nouvelle Édition, Paris
- Leach WE (1814) Crustaceology. In: Waugh J (ed) *The Edinburgh encyclopaedia*, vol 7. Brewster, D., Edinburgh, pp 383–437
- Lowry JK, Myers AA (2013) A phylogeny and classification of the Senticaudata subord. nov. (Crustacea: Amphipoda). *Zootaxa* 3610: 1–80. <https://doi.org/10.11646/zootaxa.3610.1.1>
- Marques JC, Bellan-Santini D (1991) Gammaridea and Caprellidea (Crustacea—Amphipoda) of the Portuguese south-western continental shelf: taxonomy and distributional ecology. *Bijdragen Dierkd* 61:65–87
- Moreira J, Parapar J (2008) Hesionidae y Pilargidae (Annelida: Polychaeta) del proyecto DIVA-Artabria I (campana 2002) recogidos en la plataforma y talud continental del Golfo Ártabro (Galicia, España). *Nova Acta Cient Compostel (Biol)* 17:105–115
- Myers AA (1988) A cladistic and biogeographic analysis of the Aorinae subfamily nov. *Crustac Suppl* 13:167–192
- Myers AA (1998) New and little known Corophioidea (Amphipoda: Gammaridea) from Faroese and Icelandic waters. *J Mar Biol Assoc UK* 78:211–222. <https://doi.org/10.1017/S0025315400040030>
- Nørrevang A, Brattegard T, Josefson AB, Snelli JA, Tendal OS (1994) List of BIOFAR stations. *Sarsia* 79(3):165–180. <https://doi.org/10.1080/00364827.1994.10413557>
- Parapar J, Moreira J (2008) Sobre la presencia del género *Ophelina* Ørsted, 1843 (Polychaeta, Opheliidae) en el litoral de la Península Ibérica. *Nova Acta Cient Compostel (Biol)* 17:117–134
- Parapar J, Moreira J (2009) Polychaeta of the 'DIVA-Artabria I' project (cruise 2002) in the continental shelf and upper slope off Galicia (NW Spain). *Cah Biol Mar* 50:57–78
- Señaris MP, García-Álvarez O, Urgorri V (2014) Morphology of *Falcidens vasconiensis* (Mollusca, Caudofoveata, Chaetodermatidae), including a 3D reconstruction of the internal anatomy. *J Nat Hist* 48:2871–2884. <https://doi.org/10.1080/00222933.2014.958114>
- Señaris MP, García-Álvarez O, Urgorri V (2016) Four new species of Chaetodermatidae (Mollusca, Caudofoveata) from bathyal bottoms of the NW Iberian peninsula. *Helgol Mar Res* 70:28. <https://doi.org/10.1186/s10152-016-0475-6>
- Sorbe JC, Frutos I, Aguirrezabalaga F (2010) The benthic fauna of slope pockmarks from the Kostarrenkala area (Capbreton canyon, SE Bay of Biscay). *Munibe* 58:85–98
- Stebbing TRR (1888) Report on the Amphipoda collected by HMS challenger during the years 1873–76 vol 29. Johnson Reprint Corp, London
- Stebbing TRR (1899) Revision of amphipoda (continued). *Ann Mag Nat Hist* (ser. 7) 4:205–211
- Stebbing TRR (1908) South African Crustacea. Part IV. *Ann S Afr Mus* 6:1–96
- Tato R (2015) Estudio taxonómico y ecológico de los anfipodos (Crustacea, Peracarida) de las expediciones DIVA Artabria en los fondos profundos de Galicia (NO Península Ibérica). PhD Thesis (unpublished), Universidad de Santiago de Compostela (Spain)
- Tato R, Moreira J (2017) Two new species of the suborder Senticaudata (Crustacea: Amphipoda) from the upper continental slope off Galicia (NW Iberian peninsula). *Zootaxa* 4300:217–237. <https://doi.org/10.11646/zootaxa.4300.2.4>
- Zamarro M, García-Álvarez Ó, Urgorri V (2016) On the biodiversity of the family Simrothiellidae (Mollusca, Solenogastres) in the upper-slope of the NW Iberian peninsula with the description of three new species. *Mar Biodivers* 46:655–680. <https://doi.org/10.1007/s12526-015-0414-9>