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A new species of the genus *Hippomedon* (Crustacea, Amphipoda) from the Margarita Island, Baja California Sur, west coast of Mexico

Una especie nueva del género *Hippomedon* (Crustacea, Amphipoda) de la isla Margarita, Baja California Sur, en la costa oeste de México

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ABSTRACT

The amphipod genus *Hippomedon* (family Tryphosidae) is represented by 10 species in the eastern tropical Pacific. A new species collected in Margarita Island is described. It differs from all others species in the region by the combination of the following characters: **antenna 1** article 1 of main flagellum with a tuft of setae on the posterodistal margin; **antenna 2** anterior margin articles 4 and 5 naked; **mandible palp** article 2 with one distal seta; article 3 inner margin with 16 setae; **maxilliped** inner plate as long as palp of article 1; outer plate with 11 molariform setae; palm of **gnathopod 1** evanescent; dactylus of **gnathopod 2** inserted near to palmar angle; article 5 anterior margin without setae; **coxa 4** with posterior lobe well developed; **pereopod 5** with the maximum width basally; article 2 of **pereopod 7**, 3.5 times wider than article 3; peduncle of **uropod 1** with 5 tiny setae; **uropod 3** outer ramus biarticulate; **epimeron 2** posteroventral corner acute; **epimeron 3** posteroventral corner produced into strong tooth without notch at base. Figures and a table that offers the chronological information, location, depth and sex of each known species in the region, are also provided.

Key words: Amphipoda; new species; Margarita Island; West coast of Mexico

RESUMEN

El género *Hippomedon* (familia Tryphosidae) está representado por 10 especies en la isla Margarita, en la costa este del Pacífico tropical. Se describe una especie nueva de dicho género, recolectada en la isla Margarita. La misma se diferencia de todas las demás por la combinación de los siguientes caracteres: artejo 1 del flagelo

principal de la **antena 1** con un mechón de setas en el margen posterodistal; margen anterior de los artejos 4 y 5 de la **antena 2** desnudos; artejo 2 del **palpo mandibular** con una seta distal; margen interno del artejo 3 con 16 setas; placa interna del **maxilípodo** tan larga como el artejo 1 del palpo; placa externa con 11 setas molariformes; palma del **gnatópodo 1** evanescente; dactilo del **gnatópodo 2** insertado cerca del ángulo palmar; margen anterior del artejo 5 sin setas; lóbulo posterior de la **coxa 4** bien desarrollado; **pereópodo 5** con el ancho máximo basalmente; artejo 2 del **pereópodo 7**, 3.5 veces más ancho que el artejo 3; pedúnculo del **uropod 1** con cinco pequeñas setas; rama exterior del **urópodo 3** biarticulada; ángulo posteroventral del **epímero 2** agudo; ángulo posteroventral del **epímero 3** producida en un diente fuerte sin muesca en la base. Se ofrecen, además, las figuras y una tabla con la información cronológica, la localidad, la profundidad y el sexo, de cada especie citada.

Palabras clave: Amphipoda, especie nueva, Isla Margarita, costa occidental, México

INTRODUCTION

The genus *Hippomedon* Boeck, 1871 is a worldwide group of amphipods composed of more than 60 species and subspecies, some of which have been described incompletely (poor descriptions or lack of figures of the mouthparts, especially the setotaxia of the internal plate of the maxilla 1, the details of both gnathopods, the pereopods and the epimers) which has created some taxonomic confusion (Lowry & De Broyer 2014, Kilgallen & Lowry 2015). These species have a wide bathymetric range in the tropical eastern Pacific (Hurley 1963, Barnard 1964, 1971, García Madrigal 2007), and 10 have been cited for the region (Hurley 1963, Jarret & Bousfield 1982, Barnard & Karaman 1991, Chapman 2007, García Madrigal 2007, Cadien 2015, Cadien et al. 2018). During a collection of macrobenthos occurring on sandy substrate in the Margarita island, Gulf of California, numerous amphipods were found, among which a new species of *Hippomedon* was detected. It is described herein.

MATERIAL AND METHODS

The material was caught with a van Veen grab of 0.3 m² in sandy bottom during an ongoing research project carried out by FEDECOOP (Federation of fishing cooperatives of Baja California Sur), in the north coast of Margarita Island.

Dissections and figures were made by using a Motic stereo microscope, with the aid of a camera lucida. Figures were inked with the Corel Draw X4 program.

The taxonomy procedure follows Lowry & Myers (2018). The used terminology to describe setae follows Lowry and Stoddart (1995). The holotype is deposited in the Colección Nacional de Crustáceos, Instituto de Biología, Universidad Nacional Autónoma de México (CNCR).

RESULTS

Taxonomy

Order Amphipoda Latreille, 1816

Suborder Amphilochidea Boeck, 1871

Infraorder Lysianassida Dana, 1849

Parvorder Lysianassidira Dana, 1849

Superfamily Lysianassoidea Dana, 1849

Family Tryphosidae Lowry & Stoddart, 1997

Genus *Hippomedon* Boeck, 1871

Hippomedon cervantesi sp. nov.

(Figures 1–4)

Material examined. Holotype. Ovigerous female, 7.2 mm total length, 02/10/2019, 16 m depth, sandy bottom, collector J. González Zalazar, deposited in the National Crustacean Collection, Institute of Biology, National Autonomous University of Mexico (CNCR 35342).

Diagnosis. Eyes apparently absent; maxilla 1 inner plate, tip with one robust seta and another simple; outer plate with 10 robust setae, ST1-ST5 equals in length and poorly cuspidate, STA-STC 0.5x ST1-ST5, slightly cuspidate, STD-STE weak, 0.3–0.4x shorter than STA-STC; palp of article 2 with a row of 19 closely-set short setae epimeron posterior tooth lacking notch at base; coxae 1-2 with posterodistal teeth; pleonal segment 4 rounded above; outer ramus of uropod 3 biarticulate; telson cleft 0.7x total length; article 1 of antenna 1 lacking large massiform process; propodus of gnathopod 1, 0.7x as long as carpus; basis of pereopod 5 distally narrowing asymmetrically; first flagellar article of antenna 1 with two distal setae; propodus of gnathopod 1 with obsolescent palm.

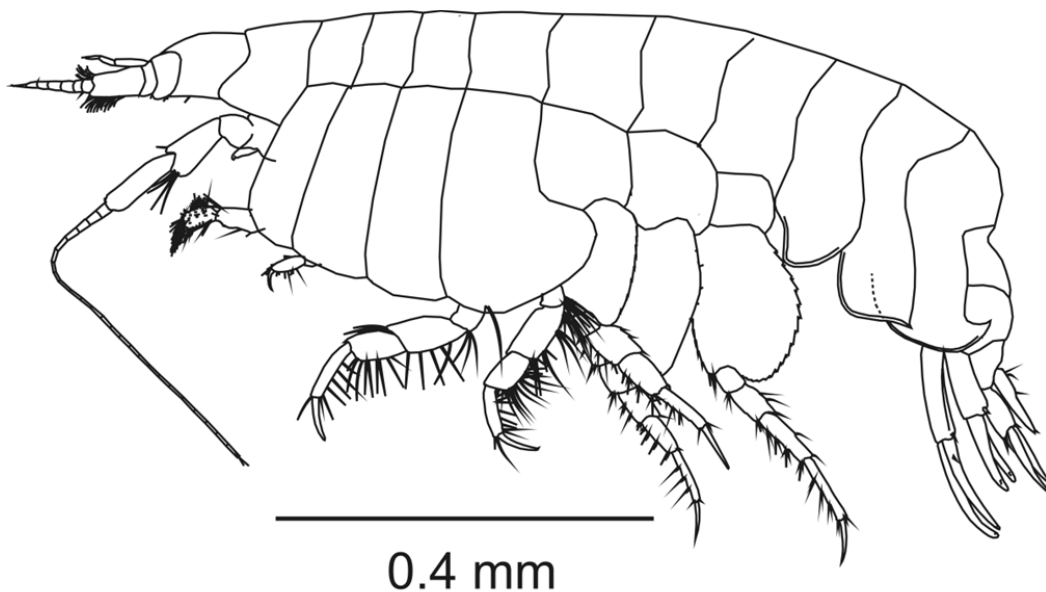


Figure 1. *Hippomedon cervantesi* sp. nov. Holotype female (CNCR 35342). Lateral view of body.

Description (holotype ovigerous female). **Head.** Conical cephalic lobe present, not sharply acute, eyes apparently absent, a slight indication of ocular lens (Figures 1, 2A). **Antenna 1.** 2.0x as long as antenna 2, article 1 of the peduncle 2.0x as long as articles 2 and 3 combined, lower margin with one short intermediate seta, two more distally, article 2 with a ventrodistal seta, accessory flagellum of three articles; main flagellum with 7 segments (Figures 1, 2A). **Antenna 2.** Article 5, 1.1x longer than 4, article 4 anterodistal lobe with one short seta, posterodistal lobe with 4 long setae, flagellum with 25 articles (Figures 1, 2A). **Maxilliped.** Inner plate 0.5x as long as outer plate, with 4 distal and 8 inner subdistal setae, outer plate with 11 molariform teeth on inner margin, palp article 2 with 13 curved setae in inner margin, outer distal corner with 2 setae, article 3 inner margin with 8 setae, dactylus with outer and inner setae (Figure 2B). **Maxilla 1.** Inner plate 0.5x as wide as outer plate, tip with one robust seta and another simple; outer plate with 10 robust setae, ST1-ST5 equals in length and poorly cuspidate, STA-STC 0.5x ST1-ST5, slightly cuspidate, STD-STE weak, 0.3–0.4x shorter than STA-STC, palp of article 2 with a row of 19 closely-set short setae (Figure 2C). **Maxilla 2.** Outer plate basally, 1.3x as wide as inner, with 12 long and short distal setae, and 2 subdistal setae on outer margin; inner plate with 9 distal setae, 6 lateral setae in inner margin (Figure 2D). **Mandible.** Lacinia mobilis absent in both mandibles, incisor broad, smooth, molar forming a setose palp, poorly triturative, mandible palp article 3, 0.8x shorter than long as article 2, inner margin covered with a set of 14 comb setae (Figure 2G). **Lower lip.** Wide, with outer plate rounded, with tiny setae on both side of the middle notch, mandible lobes not so well developed (Figure 2E). **Upper lip.**

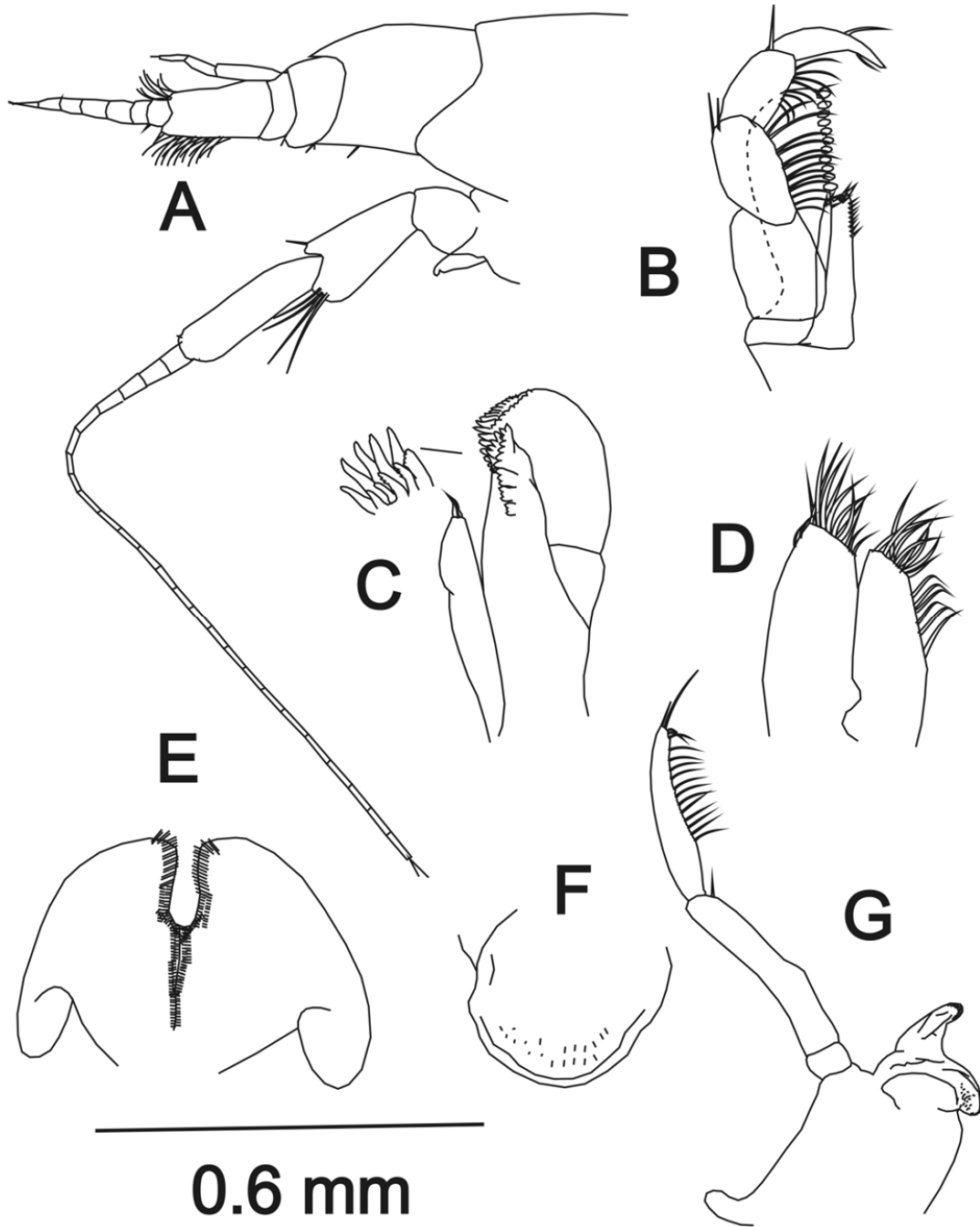


Figure 2. *Hippomedon cervantesi* sp. nov. Holotype female (CNCR 35342). A) lateral view of head and antennae; B) maxilliped; C) maxilla 1; D) maxilla 2; E) lower lip; F) upper lip; G) mandible.

Rounded, naked, not produced (Figure 2F). **Gnathopod 1.** Coxa 3, as long as wide, 0.8x lower than coxa 2, 0.4 longer than coxa 2, with small posteroventral notch; basis 1.2x longer than the merus and carpus combined, carpus 1.3x longer than propodus, propodus with obsolescent palm (Figure 3A). **Gnathopod 2.** Coxa subrectangular, 2.3x longer than wide, with small posteroventral notch, basis 1.6x longer than ischium, ischium equal to the he carpus, propodus 0.7x shorter than carpus, dactylus short, inserted in palmar angle (Figure 3B).

Pereopod 3. Coxa 2.8x longer than wide, slightly curved, naked, basis equal as the merus and carpus combined, merus, carpus and propodus with long ventral setae, dactylus 0.7x shorter than propodus (Figure 3C). **Pereopod 4.** Coxa wide, posterior lobe well developed, naked, basis equal to the merus and carpus combined, isquium, merus, carpus and propodus covered with setae ventrally, carpus dactylus 0.8x shorter than propodus (Figure 3D). **Pereopod 5.** Coxa quadrangular, naked, basis anterior margin with 13 equidistant short setae, posterior margin tapering distally, slightly serrated, merus, carpus and propodus increasing gradually its length, dactylus 0.9x shorter than propodus (Figure 3E). **Pereopod 6.** Coxa subquadrangular, basis anterior margin with its distal

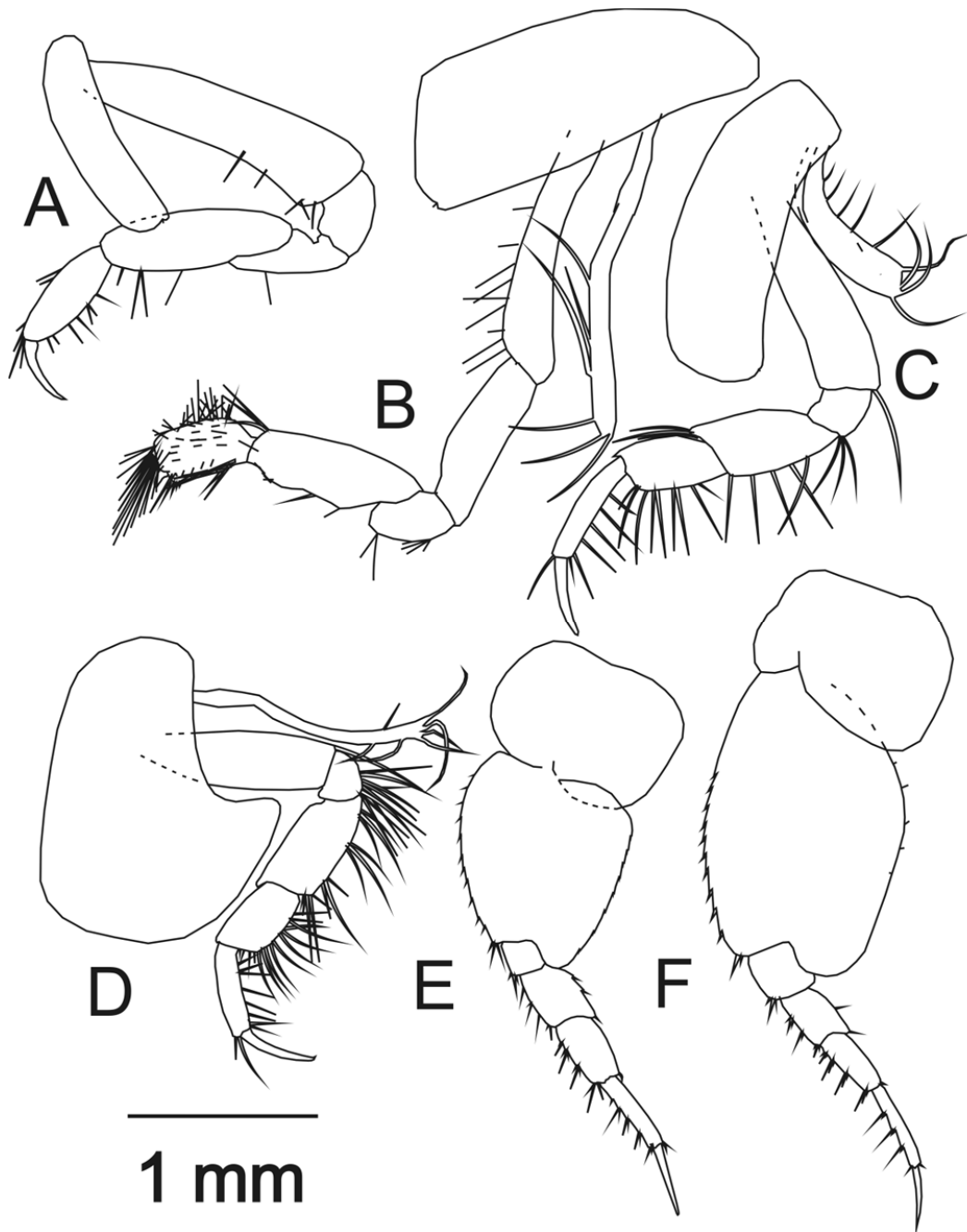


Figure 3. *Hippomedon cervantesi* sp. nov. Holotype female (CNCR 35342). A) gnathopod 1; B) gnathopod 2; C) pereopod 3; D) pereopod 4; E) pereopod 5; F) pereopod 6.

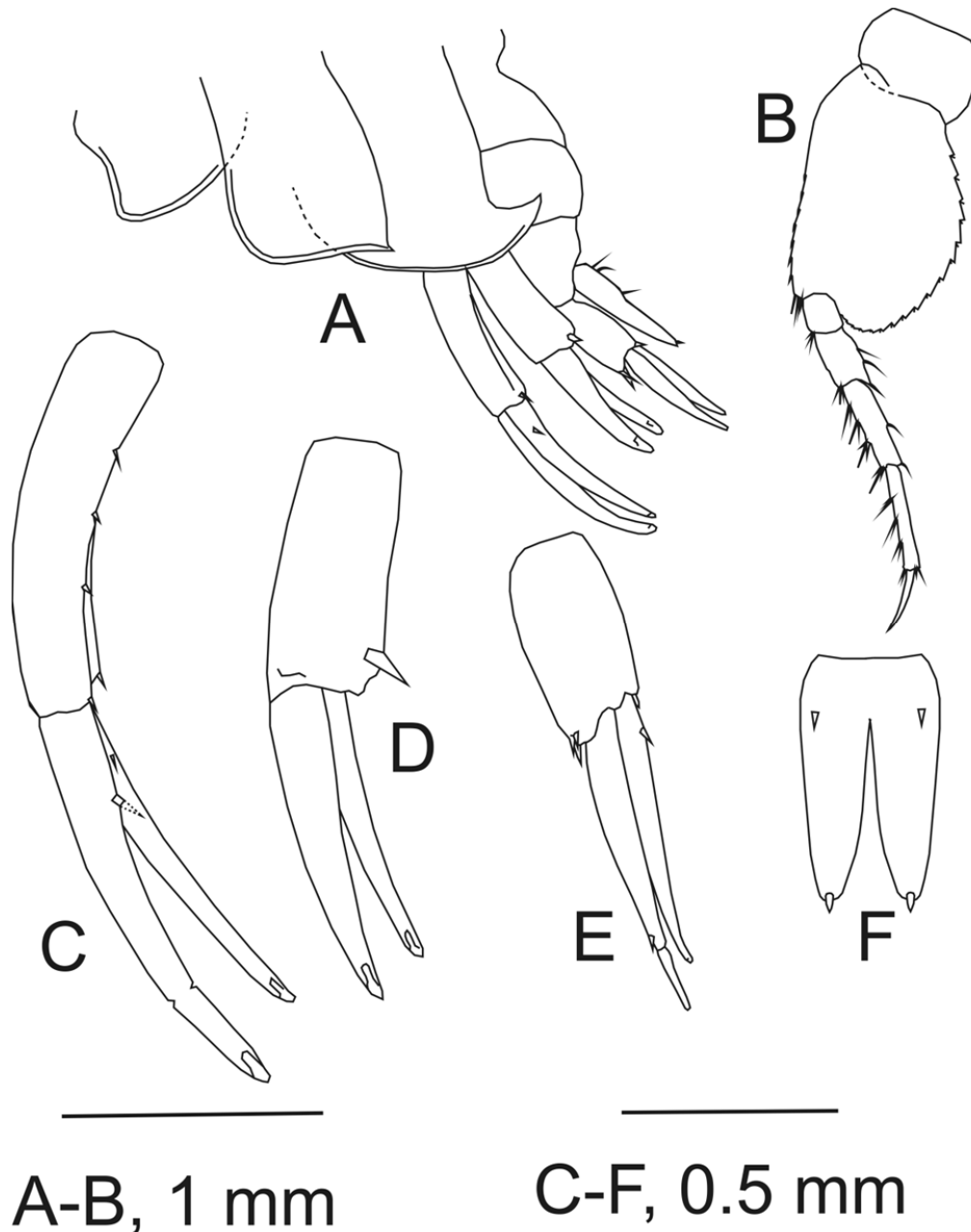


Figure 4. *Hippomedon cervantesi* sp. nov. Holotype female (CNCR 35342). A) lateral view of urosoma, uropod and telson; B) pereopod 7; C) uropod 1; D) uropod 2; E) uropod 3; F) dorsal view of telson.

2/3 with 12 small setae, posterior margin tapering from distal half, covered with tiny setae, merus, carpus and propodus increasing gradually its length, dactylus 0.7x shorter than propodus (Figure 3F). **Pereopod 7.** Coxa quadrangular, naked, basis posterodistally produced beyond merus, anterior margin almost straight with 7 marginal and 4 distal setae, posterior margin regularly curved and serrate, merus, carpus and propodus increasing gradually in length, dactylus 0.4x shorter than propodus (Figure 4B). **Epimeron 1.** Naked, anteroventral corner rounded (Figure 4A). **Epimeron 2.** Naked, posteroventral corner acute (Figure 4A). **Epimeron 3.** With broad posteroventral tooth, naked, without notch at base of tooth, evenly tapering (Figure 4A). **Uropod 1.** Rami as long as peduncle, outer ramus with a lateral robust seta, inner ramus naked, 0.9x shorter than outer (Figure 4C). **Uropod 2.** Peduncle with a subterminal strong robust seta, outer ramus 1.2x longer than peduncle, inner ramus

1.1x longer than peduncle (Figure 4D). **Uropod 3.** Peduncle 0.8x shorter than outer ramus, with three robust setae in the outer distal corner and one in the inner corner, inner ramus with one proximal robust seta, outer ramus biarticulate, with one robust seta on distal margin of first article (Figure 4E). **Telson.** Dorsally naked, bilobed, cleft more than 0.7x its length, with a robust seta at the tip of each lobes (Figure 4F).

Etymology. This species is dedicated to Dr. Rafael Cervantes Duarte, from the Interdisciplinary Center of Marine Sciences of the National Polytechnic Institute (IPN-CICIMAR), for his contributions to the development of marine ecology in Mexico.

Table 1. Chronological list of the *Hippomedon* species described for the area between Oregon, USA, and Ecuador, NE Pacific. ND, no data provided.

Species	Localities	Depth (m)	Sources	Sexes described
<i>H. denticulatus</i> Spence Bate, 1857	Station 1471-42 off 10 mile Creek, S. of Winchester Bay, Oregon	36-72	Barnard 1954	♀
	From 34 sampling stations	36-315	Hurley 1963	♂ ♀
	From Oregon to Lower California	150-225	Barnard 1971	♀
	Lower California, and San Quintin, Vizcaino and San Cristobal Bays	0-924	García Madrigal 2009	ND
<i>H. coecus</i> (Holmes, 1908)	Monterey Bay	102-104	Holmes 1908	♀
	From 33 sampling stations	108-126	Hurley 1963	♂ ♀
	Santa Cruz Island South to Point Conception, southern California	ND	Barnard & Karaman 1991	ND
	Monterey Bay	84-200	Cadien 2015	ND
	Southern California Bight	ND	Cadien et al. 2018	ND
<i>H. granulatus</i> Bulycheva, 1955	San Diego Trough	1302-1354	Cadien, 2015	ND
<i>H. columbianus</i> Jarret & Bousfield, 1962	British Columbia, Vancouver	4-67	Jarret & Bousfield 1963	♂ ♀
	Boreal Eastern Pacific	ND	Barnard & Karaman 1991	ND
	ND	4-320	Chapman 2007	ND
	British Columbia to San Cristobal Bay	4-67	Cadien 2015	ND
	Southern California Bight	ND	Cadien et al. 2018	ND
<i>H. subrobustus</i> Hurley, 1963	From 36 sampling stations	36-315	Hurley 1963	♂ ♀
	Boreal Eastern Pacific			
	ND	Bathyal	Barnard & Karaman 1991	ND
	San Cristobal Bay		Cadien 2015	ND
	Southern California Bight	ND	Cadien et al. 2018	ND
<i>H. zetesimus</i> Hurley, 1963	From 36 sampling stations	15-36	Hurley 1963	♂ ♀
	Magdalena: West coast of Baja California, from Ensenada to Punta Arena, including Cabo San Lucas	ND	Barnard & Karaman 1991	ND
	San Cristobal Bay	30-150	Cadien 2015	ND
	Southern California Bight	ND	Cadien et al. 2018	ND
<i>H. strages</i> Barnard, 1964	Off Guayaquil	2861-2864	Barnard 1964	♀
	Cascadia Abyssal Plain, Oregon to Ecuador	2813-2864	Cadien 2015	ND
	San Quintin, Vizcaino and San Cristobal Bays	2861-2864	García Madrigal 2009	ND
<i>H. tenax</i> Barnard, 1966	Station 5811, off Ventura, California	88	Barnard 1966	♂
	San Cristobal Bay	ND	Cadien 2015	ND
	Southern California Bight		Cadien et al. 2018	
<i>H. tracatrix</i> Barnard, 1971	Cascadia Abyssal Plain, Oregon	2800	Barnard 1971	♀
		2762-2816	Cadien 2015	ND
<i>H. keldyshi</i> Vinogradov, 1994	Vents of California	3041	Cadien 2015	ND
<i>Hippomedon cervantesi</i> sp. nov.	Margarita island, South Lower California	23	Present study	♀

Remarks. Some species of the genus *Hippomedon* in Western Mexico are not well described (see above) and feature wide vertical and horizontal distributional ranges. A list of the species which are cited or described for the tropical eastern Pacific has been compiled, from the northern limit of Point Conception to Ecuador (Table 1). According to this compilation, the species most related to *Hippomedon cervantesi* sp. nov. considering their vertical distribution, are *H. denticulatus* Bate, 1857, *H. coecus* (Holmes, 1908), *H. subrobustus* Hurley, 1963, *H. zetesimus* Hurley, 1963, and *H. tenax* Barnard, 1966, while from the morphological point of view *H. zetesinus* is the closest to *Hippomedon cervantesi* sp. nov. The new species differs from *H. denticulatus*, described by Barnard (1954, 1971) as follows: a tuft of setae on distal half of the posterior margin of article 1 of antenna 1 main flagellum, one seta on distal article 2 of the mandible palp, epimeron 3 posteroventral corner produced into a strong tooth without notch at base, telson with two sub-basal setae and one robust seta at the tip of each lobe (posterior margin of antenna 1 article 1 of flagellum completely covered with setae; a tuft of setae on distal article 2 of mandible palp, epimeron 3 posteroventral corner produced into strong tooth with notch at base, telson with 4 sub-basal robust and simple setae on lateral margins of both lobules in Barnard's descriptions). The new species differs from *H. denticulatus* redescribed by Hurley (1963) as follows: anterior margin of antenna 1 articles 4 and 5 naked, 7 distal setae on palp of article 3 and 11 molariform setae in outer plate of maxilliped, maxilla 1 distal outer plate with ST1-ST5 and STA-STE (antenna 1 articles 4 and 5 covered with setae, 10 distal setae on palp article 3 and 14 molariform setae in maxilliped, maxilla 1ST1-ST7 and STA-STC in Hurley's description). It differs from *H. coecus* (Holmes 1908) by the following characters: maxilliped outer lobe inner margin with 11 molariform setae, pereopod 1 article 2 anterior margin with 5 subdistal setae, palm of gnathopod 1 evanescent (maxilliped outer lobe with 6 molariform setae, pereopod 1 article 2 anterior margin with 7 proximal and 6 subdistal setae, palm of gnathopod 1 oblique in Holmes's, description). *Hippomedon cervantesi* sp. nov. also differs from *H. subrobustus* (Hurley 1963) as follows: largest width of the article 2 of the pereopod 5 with the maximum width in the basal zone, article 2 of the pereopod 7, 3.5x wider than the article 3 (having the largest width of the article 2 of the pereopod 5 of each lobe, in the middle zone of its extension in Hurley's description). Differences with *H. zetesimus* (Hurley 1963) are: 16 setae in the distal half of the inner margin of article 3 of mandible palp; one seta on distal article 2 of mandible palp; dactylus of gnathopod 2 inserted near the palmar angle, article 5 of gnathopod 2 without setae; peduncle of uropod 1 with 5 tiny setae, peduncle of uropod 2 with a robust subdistal seta; telson with only one distal seta on each lobes (having 12 setae in the distal half of inner margin of article 3 of mandible palp, 3 setae on distal article 2 of mandible palp, dactylus of gnathopod 2 inserted midway in the palmar margin, article 5 of gnathopod 2 covered with setae, peduncle of uropod one with 5 robust setae, peduncle of uropod 2 with one small distal seta; dorsal surface of telson with 2 setae on each lobe in Hurley's description). *Hippomedon cervantesi* sp. nov. also differs from *H. tenax* described by Barnard (1966) as follows: palm of gnathopod 1 obsolescent, anterior margin of gnathopod 2 article 6 covered with setae, posterior lobe of coxa 4 well developed, dorsal surface of telson naked, uropod 3 outer ramus biarticulate (having gnathopod 1 palm oblique, anterior margin of gnathopod 2 article 6 naked, posterior lobe of coxa 4 little developed, dorsal surface of telson with one robust and one simple setae on each lobules, uropod 3 outer ramus with one article in Barnard's description).

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**Replacement for the nomenclaturally unavailable name *Birsteiniamysis*
Tchindonova (Crustacea, Mysida)**

**Reemplazo para el nombre *Birsteiniamysis* Tchindonova (Crustacea, Mysida)
nomenclaturalmente no disponible**

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ABSTRACT

The current status of the genus *Birsteiniamysis* is reviewed based on previous publications and appears to be a nomen nudum. A new genus, *Neobirsteiniamysis*, is proposed to include *Neobirsteiniamysis inermis* (Willemoes-Suhm, 1874) comb. nov. and *N. caeca* (Birstein & Tchindonova, 1958) comb. nov.

Key words: New genus, mysid shrimps, nomen nudum

RESUMEN

El estatuto actual del género *Birsteiniamysis inermis* es revisado sobre la base de la literatura publicada y se concluye que se trata de un nomen nudum. Un género nuevo, *Neobirsteiniamysis*, es propuesto para incluir *Neobirsteiniamysis inermis* (Willemoes-Suhm, 1874) n. comb. y *N. caeca* (Birstein & Tchindonova, 1958) n. comb.

Palabras clave: Nuevo género, camarones misidáceos, nomen nudum

INTRODUCTION

The genus *Birsteiniamysis* is currently recognized as a small genus of Mysida containing only two species:

B. inermis (Willemoes-Suhm, 1874), and *B. caeca* (Birstein & Tchindonova, 1958) (WoRMS 2019). In recent literature and in WoRMS editorial board (2019), the description of the genus *Birsteiniamysis* has been attributed to Tchindonova (1981). This last contribution, written in Russian with a very short English abstract, was published in a local journal. After reviewing this contribution in details (see Appendix 1), it appears that Tchindonova (1981) did not provided any characters or illustrations of the proposed genus so as to make it available according to the International Code of Zoological Nomenclature (Art. 13; ICZN 1999). The name *Birsteiniamysis* is cited in a few occasions in the text, but not in a satisfactory manner so as to be considered nomenclaturally available.

The proposal of the new genus *Birsteiniamysis* was first presented by J.G. Tchindonova in an oral communication during the XIV USSR Pacific Science Congress in Khabarovsk, USSR, in August 1979. The abstract of this communication, published the same year (Tchindonova 1979) by the Committee for Marine Sciences, referred to *Birsteiniamysis* in two items: 1) "Two genera — *Hansenomysis* and *Birsteiniamysis* have a bipolar distribution" (page 102, line 3); 2) "The genus *Birsteiniamysis* is more eurybathic; its range extends from the shelf to the ultra-abyssal depths of antarctic waters (ca 7200 m)" (page 102, lines 8–9). No diagnosis, figures or type species designation were provided in this abstract.

In a book summarizing the biological research conducted in deep water by the Soviet and foreign expeditions from 1875 to 1985, Beliaev (1989: 189) addressed the issue of the validity of *Birsteiniamysis*, and stated: "The genus *Birsteiniamysis* was isolated by Tchindonova [1981] from the genus *Boreomysis* and includes 3 species that were previously included in this genus (*B. inermis*, *B. scyphops* and *B. caeca*), as well as several, apparently, new species. However, the diagnosis of the new species [= new genus] has not yet been published, and its name still remains nomen nudum".

Only 12 years after the publication in 1981, Tchindonova (1993) published a formal diagnosis for *Birsteiniamysis* (see Appendix 2). In addition to reaffirming that *Birsteiniamysis* contains three "groups" of species ("Inermis Group, Scyphops Group and Caeca Group"), in this case the term group being ill-defined, Tchindonova (1993) considered three sets of characters as diagnostic for *Birsteiniamysis* upon stating this taxon again as a new genus: 1) eyes without pigments, outer margin strongly or slightly concave laterally, presence of microfibrinous microstructures on the concave surface, presence of visual elements inside the proximal part of the eye-stalk, and ocular papilla varying in size and location within the genus ("species-specific"); 2) lateral edges of the telson always wider or equal to proximal part; 3) statocyst poorly developed.

Art. 13(3) of the ICZN clearly indicate that "every new genus-group name published after 1930 [...] be accompanied by the fixation of a type species in the original publication" (as original designation). This nomenclatural act was not done by Tchindonova (1993). In his report on the deep-sea fauna of European seas, Petryashov (2014: 187) included *B. inermis*. Petryashov (2014) also included the genus *Birsteiniamysis* Tchindonova, 1979 (sic), using the year 1979 probably referring to the oral communication presented by J.G. Tchindonova at the meeting of 1979 which is referred to above. Petryashov (2014) mentioned that the type species of *Birsteiniamysis* is *Birsteiniamysis inermis* (W.-Suhm, 1874) (sic). Unfortunately, this did not comply with Art. 69.1 of the ICZN because this "subsequent designation" was not made for a nomenclatural act prior to 1931.

Due to the unavailability of the genus name *Birsteiniamysis*, its combinations with species names are unavailable and have never been available. Thus, these species names fall back to the state before the publication by Tchindonova (1979) and their currently available species names (in part recombined below) are:

Petalophthalmus inermis Willemoes-Suhm, 1874 [outdated senior synonym of *Boreomysis inermis*]

Boreomysis inermis (Willemoes-Suhm, 1874) [considered valid]

Boreomysis scyphops G.O. Sars, 1879 [junior synonym of *Petalophthalmus inermis*, now *Boreomysis inermis*]

Boreomysis caeca Birstein & Tchindonova, 1958 [considered valid]

***Neobirsteiniamysis* Hendrickx & Tchindonova, 2019**

Emended synonymy

Birsteiniamysis.- Tchindonova, 1979: 102 (nomen nudum)

Birsteiniamysis.- Tchindonova 1981: 26, 29 (nomen nudum).

Birsteiniamysis.- Beliaev, 1989: 189 (as *Birsteiniamysis* Tchindonova, 1981; referred to as nomen nudum).

Birsteiniamysis.- Tchindonova, 1993: 153 (nomen nudum).

Birsteiniamysis.- Petryashov, 2014: 187 (as *Birsteiniamysis* Tchindonova, 1979)

Diagnosis. Eyes without pigments, outer margin strongly or slightly concave laterally, presence of microfibrinous microstructures on the concave surface, visual elements inside the proximal part of the eye-stalk present or absent, ocular papilla varying in size and location within the genus; lateral edges of the telson always wider or equal to proximal part; statocyst poorly developed (this description of the new genus is the sole responsibility of Hendrickx, M.E. & J.G. Tchindonova).

Type species. The type species of *Neobirsteiniamysis* Hendrickx & Tchindonova, 2019, is herein designated as *Petalophthalmus inermis* Willemoes-Suhm, 1874.

Derivatio nominis. The new genus name is a combination of "neo" (new) and "*birsteiniamysis*" (the genus-name it replaces), thus indicating the origin of the proposed new genus and its historical relationship with the nomenclaturally unavailable name *Birsteiniamysis*.

Species included.

Neobirsteiniamysis inermis (Willemoes-Suhm, 1874) comb. nov.

Neobirsteiniamysis caeca (Birstein & Tchindonova, 1958) comb. nov

To avoid further confusion, it is important to emphasize that *Boreomysis inermis* Hansen, 1910, junior homonym of *Petalophthalmus inermis* (recombined as *Boreomysis inermis*), is probably a junior synonym of *Boreomysis rostrata* Illig, 1906 (see W.M. Tattersall 1951).

Appendices 1 and 2 provide translations of the Russian text in contributions by Tchindonova (1981, 1993) related to *Birsteiniamysis inermis*.

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Appendix 1. Translated from Tchindonova (1981)

Fam. Boreomysidae contains two genera: *Boreomysis* G.O. Sars and *Birsteiniamysis* gen. nov. the last of them includes an ecologically isolated group of the deep-sea bottom mysids with specific features (the genus *Boreomysis* dwells in pelagic).

The genus *Birsteiniamysis* is formed by isolating of three species from the genus *Boreomysis* - *B. inermis*, *B. scyphops* and *B. caeca* - with the addition of a new species and subspecies. In Antarctica, [*Birsteiniamysis*] it is represented by all species except the one of the north-pacific (*B. caeca*) and a one new of the Sea of Okhotsk subspecies. In Antarctica, the genus is circumpolarly distributed; its individual species and subspecies are found in various places rather locally.

Two deep-sea genera, *Hansenomysis* and *Birsteiniamysis*, have a close geographical distribution, although the distribution pattern of their species is different. In most cases the species of these genera are found locally in the moderately cold waters of both hemispheres and only a few are more widely distributed.

In the Pacific Ocean, the genus is dispersed along the western continental slope of the American continent with a gap in the equator, and further advances north along the slope of the Aleutian ridge towards the Sea of Okhotsk and the Kuril-Kamchatka trench. This “semicircular” distribution is characteristic of only one species, *B. inermis*. A thorough taxonomic analysis of specimens of *B. inermis* was carried out only on the basis of materials from the Antarctic and the northwestern Pacific waters. All collections collected in the East Pacific by the “Albatross” have not yet been reviewed. In the northern Atlantic, north of the Faroe-Iceland Ridge, on the bathyal slopes, up to 80°N, only one species occurs, *B. scyphops*. The distributions of *B. inermis* and *B. scyphops* living in the Northern and Southern hemispheres are interesting. Morphological differences between the Antarctic specimens and the boreal-arctic are extremely small. The obtained material allows us both to discuss the bipolarity of each of these species, taking a broader interpretation of the species similarity, and to consider their northern and southern forms as a sibling species in the sense of Mayr (1974). A slight [difference in a] morphological feature can serve as an additional evidence of the independence of the southern and northern forms of both species, taking into account their reproductive isolation. However, for allocation into an independent species rank of the southern form of *B. scyphops* and the northern *B. inermis* additional material is required. The vertical distribution of *B. scyphops* in the Northern Hemisphere covers depths from 1000 to 2500 m, and in the Southern Hemisphere from 4500 to 7200 m. The different depths are occupied in the northwestern Pacific Ocean by *B. inermis*, which lives in the Kuril-Kamchatka trench (2000–5700 m), and a subspecies of *B. inermis ochotskii* subsp. nov. from the Sea of Okhotsk (900–1200 m). In the Antarctic waters *B. inermis* occurs at depths of about 1600–2000 m. Similarly distributed [is the case of] one species of the genus *Amblyops* (*A. crozetii*): with the morphological similarity, but not absolute identity, this species is found in the Antarctic and in the northwestern part of the Pacific Ocean.

The geographical distribution of the genus *Hansenomysis* in general terms corresponds to the distribution of the genus *Birsteiniamysis*, i.e. both are circumpolar in the Antarctic, then [occur] along the western coast of the American continent to the north (with a small gap in tropical latitudes), in the northwestern Pacific Ocean and the North Atlantic. The distribution of species of this genus is different; they do not show a tendency to bipolarity (or to the formation of a sibling species) but,

on the contrary, almost all are endemic to certain regions and only a few are circumpolar in the Antarctica, advancing into the Peru-Chile trench; moreover, they do not occur constantly, but from place to place. In the northern part of the Atlantic Ocean, only one species of the genus *Hansenomysis* was found (as in the genus *Birsteiniamysis*). After processing the materials of the 11th voyage of the R/V “Akademik Kurchatov”, the fauna of the Antarctic waters was replenished with a new species and subspecies of these genera; in addition, for the genus *Hansenomysis*, M. Bacescu indicated seven new species from the Peru-Chile trench (Bacescu 1971).

Appendix 2. Translated from Tchindonova (1993)

Eyes unpigmented, outer margin strongly or slightly concave on lateral or anterolateral side. Concave surface with microfibrinous microstructure. Visual elements located inside proximal part of eye stalk. Degree of development of ocular rudimentary papilla and its location on stem species-specific. Lateral edges of telson always wider or equal to proximal part. Statocyst poorly developed.

The genus includes three groups of species: *Inermis* Group, *Scyphops* Group and *Caeca* Group.

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