

ON TWO SPECIES OF *DIASTYLIS* (CUMACEA) FROM THE SOUTHWESTERN ATLANTIC:
D. SEXPECTINATA N. SP. AND *D. HAMMONIAE* ZIMMER, 1902

Natalia A. Alberico and Daniel Roccatagliata

(DR, correspondence, rocca@bg.fcen.uba.ar) Departamento de Biodiversidad y Biología Experimental, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Ciudad Universitaria, C1428EHA, Buenos Aires, Argentina

A B S T R A C T

Diastylis sexpectinata, a new species of cumacean that extends from São Paulo State (Brazil) to northern Patagonia (Argentina), is herein fully described and illustrated. This species can be easily distinguished from the other members of the genus by the following combination of characters: 1) carapace with a pair of anterolateral horns and six longitudinal rows of conical teeth (middle and uppermost rows poorly developed or absent in the adult male), 2) third and fourth pereopods of the female without rudimentary exopods, and 3) uropod endopod consisting of two articles, the proximal one in the female with 3-4 teeth on outer margin. The description of the female of *Diastylis hammoniae* is completed and the adult male described for the first time based on its type material and additional specimens herein reported. The type species of *Leptostylis* (?) *mancoides* was also re-examined and its synonymy with *Diastylis hammoniae* is proposed. The synonymy of *D. hammoniae* with *Diastylis manca* is also strongly suspected, but until additional specimens become available *D. manca* should be treated as “species inquirenda.” An identification key to the species of the genus *Diastylis* from Argentina and Uruguay is given.

KEY WORDS: Cumacea, *Diastylis*, South-West Atlantic, taxonomy

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INTRODUCTION

Diastylis hammoniae Zimmer, 1902 was described based on a large female collected near Cape Blanco, East Patagonia, at 80 fath. [146 m], on 25 April 1883 (see Fig. 1). Besides, in the same contribution this author reported another female also from off East Patagonia, collected at 43°06'S, 60°00'W, at 56 fath. [102 m], on 1 May 1888. More recently, Błażewicz-Paszkowycz and Heard (2005) redescribed and illustrated an additional female collected during the Cruise 6 by the R/V *Eltanin* in 1968. The stations they reported are Burdwood Bank at 119 m depth (Cr. 6, Sta. 344) and the Drake Passage at 3477-3590 m depth (Cr. 6, Sta. 363). However, the record from Drake Passage appears to be erroneous (apparently a mislabeling error occurred, see Błażewicz-Paszkowycz and Heard, 2001).

There are two species of doubtful identity in the area, *Diastylis manca* (Sars, 1873) and *Leptostylis* (?) *mancoides* Băcescu-Meşter, 1967. The descriptions of these two species are based on immature specimens and both were collected off the Río de la Plata estuary. More recently, Brandt et al. (1999) and Mühlenhardt-Siegel (1999) reported additional specimens of *D. manca* from the Beagle Channel among the cumaceans collected by the 1994 Joint Magellan Expedition “Victor Hensen” (Sta. 1247, 1253 and 1307). Additional specimens obtained by the same expedition at Sta. 1124, just a few miles away from Sta. 1247 and 1253, are herein identified as *D. hammoniae*.

In this contribution, *Diastylis sexpectinata* n. sp. is fully described and illustrated based on specimens collected off the Argentine-Uruguayan common fishing zone. Regarding *D. hammoniae* the adult male is described for the first time and the adult female briefly redescribed based on type

material and additional specimens herein reported. Besides *L. (?) mancoides* is considered a junior synonym of *D. hammoniae*, and *D. manca* is regarded as a “species inquirenda.” Finally, to facilitate ongoing studies on this genus, a key to the species of *Diastylis* from Argentina and Uruguay is provided.

MATERIAL AND METHODS

The specimens of our new species of *Diastylis* are heavily covered with detritus, a fact that makes the examination of details difficult. Hence, those specimens used in illustrations were rinsed in 0.5% nonionic detergent Triton X100, and the detritus removed with the help of an ultrasonic cleaner and/or a fine brush. Afterwards, the specimens were stained with Chlorazole Black E. Appendages were dissected and mounted in glycerin to retain the possibility of manipulation. Illustrations were made with the aid of drawing tubes attached to a Leica MZ8 dissecting microscope and a Carl Zeiss Axioskop compound microscope. All dissected appendages were finally dismantled from the temporary slides and stored together with other body remains in ethanol 70%.

The sequence to prepare specimens for SEM involved the removal of debris applying the same procedure used for the drawings, dehydration through a graded series of ethanol, and drying to critical point. The specimens were examined under a Philips XL30 TMP microscope.

Body lengths were measured from the tip of the pseudorostrum to the end of the telson (distal setae excluded). In the descriptions of the appendages the term “remaining articles together” stands for the ischium to dactylus length, not including terminal setae. The telsonic pre-anal and post-anal parts were measured with the specimen in ventral view: the former extends to the tip of the anal valves; the latter does not include the distal setae.

For the definitions of the types of setae see Alberico and Roccatagliata (2008). Two additional types are mentioned in this contribution: 1) the thin sinuate setae, which are translucent, of an uniform thickness, and usually broken distally, and 2) the slender setae, which are thin, with a sensory tip and seem to derive from cuspidate setae by elongation (see detail Fig. 10C).

The specimens used to draw the habitus were not dissected. Illustrations of the appendages of the new species herein described were based on

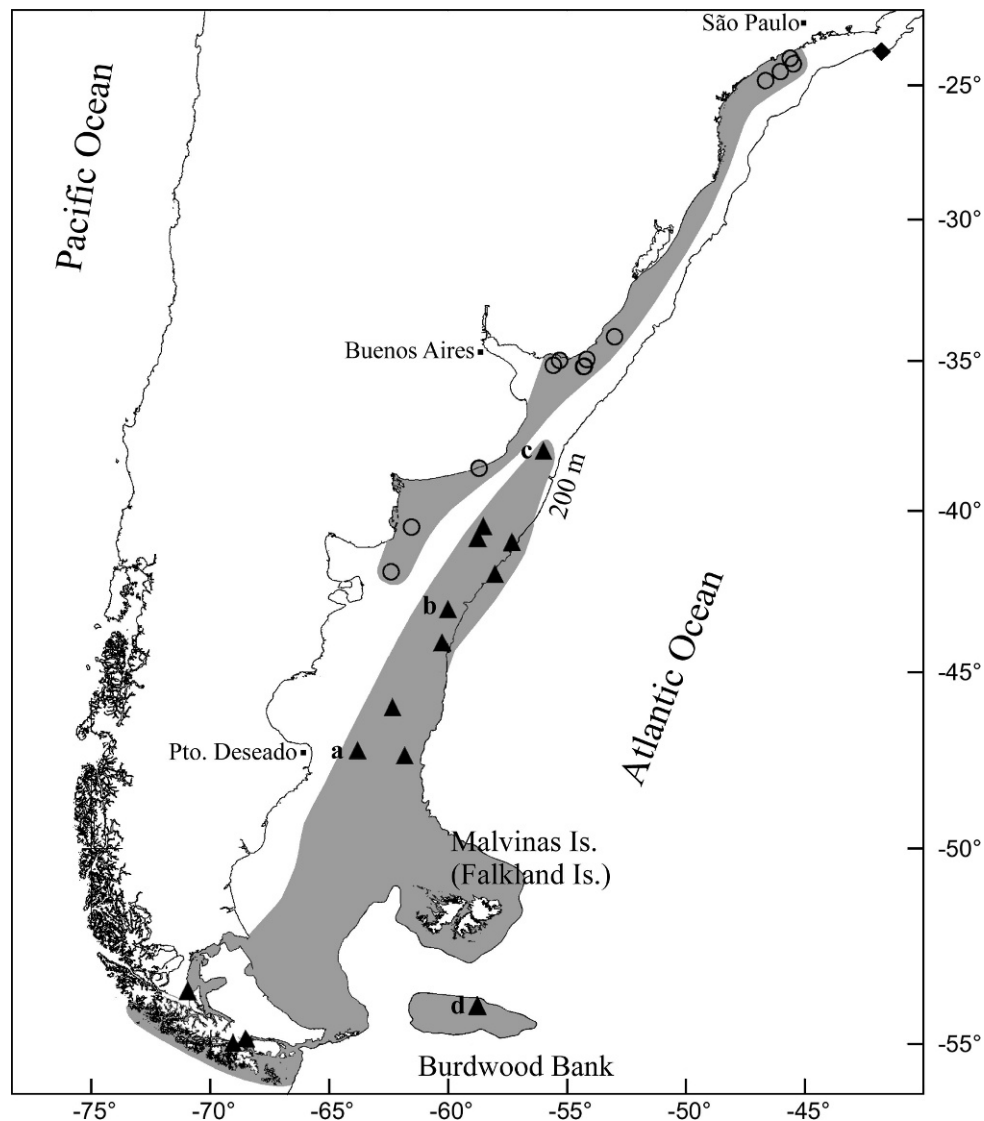


Fig. 1. (◆) *D. fimbriata* Sars, 1873, type locality. (○) *Diastylis sexpectinata* n. sp. (▲) *D. hammoniae* Zimmer, 1902. Shadings show the expected areas of distribution of the latter two species. The letter “a” stands for the approximate type locality of *D. hammoniae*; “b” for the locality of the paratype of *D. hammoniae*; “c” for the locality of *Leptostylis manca* G. O. Sars?; and “d” for the Sta. 344, Cr. 6, of the R/V “Eltanin”, from where Błażewicz-Paszkowycz and Heard, 2005 reported an additional specimen of *D. hammoniae*.

additional paratypes (2 males, 2 females). When there was a slight discrepancy between the two dissected males (or females), the data of the second paratype was added in the text between parentheses.

Type and reference specimens were deposited in the Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” (MACN), the Museo Nacional de Historia Natural y Antropología, Montevideo (MNHNM), the Museu de Zoologia da Universidade de São Paulo (MZUSP), and the Zoologisches Museum, Hamburg (ZMH). All these specimens are preserved in 70% ethanol, except for those prepared for SEM examination, which are dry and stuck on aluminium stubs.

SYSTEMATICS

Diastylis sexpectinata n. sp. (Figs. 2-8)

Material Examined.—R/V “Prof. W. Besnard”. Off São Paulo State, Brazil, ECOSAN Project. Sta. 2, 23°56′49″S, 45°37′12″W, 34 m, February 2006, sledge: 1 ad. ♀, 3 subad.

♀♀, 2 subad. ♂♂, 1 juv., 1 manca (MZUSP 19840). Sta. 3, 24°10′19″S, 45°29′06″W, 58 m, August 2005, sledge: 1 ad. ♀, 1 subad. ♂ (MZUSP 19844). Sta. 11, 24°27′39″S, 46°02′02″W, 56 m, August 2005, sledge: 2 ad. ♀♀, 1 subad. ♂, 2 juv., 1 manca (MZUSP 19864). Sta. 20, 24°48′36″S, 46°39′10″W, 51 m, February 2006, box corer: 1 subad. ♀, 1 subad. ♂ (MZUSP 19824).—R/V “Aldebarán”. Sta. 2002-05 R2, 34°10′S, 53°00′W, 33 m, December 2002: 174 ad. ♀♀, 1073 subad. ♀♀, 144 ad. ♂♂, 796 subad. ♂♂, 1077 juv., 327 mancas (holotype MNHNM 1960, paratypes: MNHNM 1959 and MACN-In. 37724). Sta. 9906 L28, 34°56′54″S, 54°10′12″W, 36 m, 12 December 1996: 66 ad. ♀♀, 154 subad. ♀♀, 39 ad. ♂♂, 157 subad. ♂♂, 116 juv. (MNHNM 1956 and MACN-In. 37753). Sta. 2007/08 L8, 35°09′18″S, 55°34′30″W, 11 m, June 2007: 2 ad. ♀♀, 4 subad. ♀♀, 6 subad. ♂♂, 4 juv. (MNHNM 1957 and MACN-In. 37754). Sta. 2002-05 R1, 35°11′S, 54°16′W,

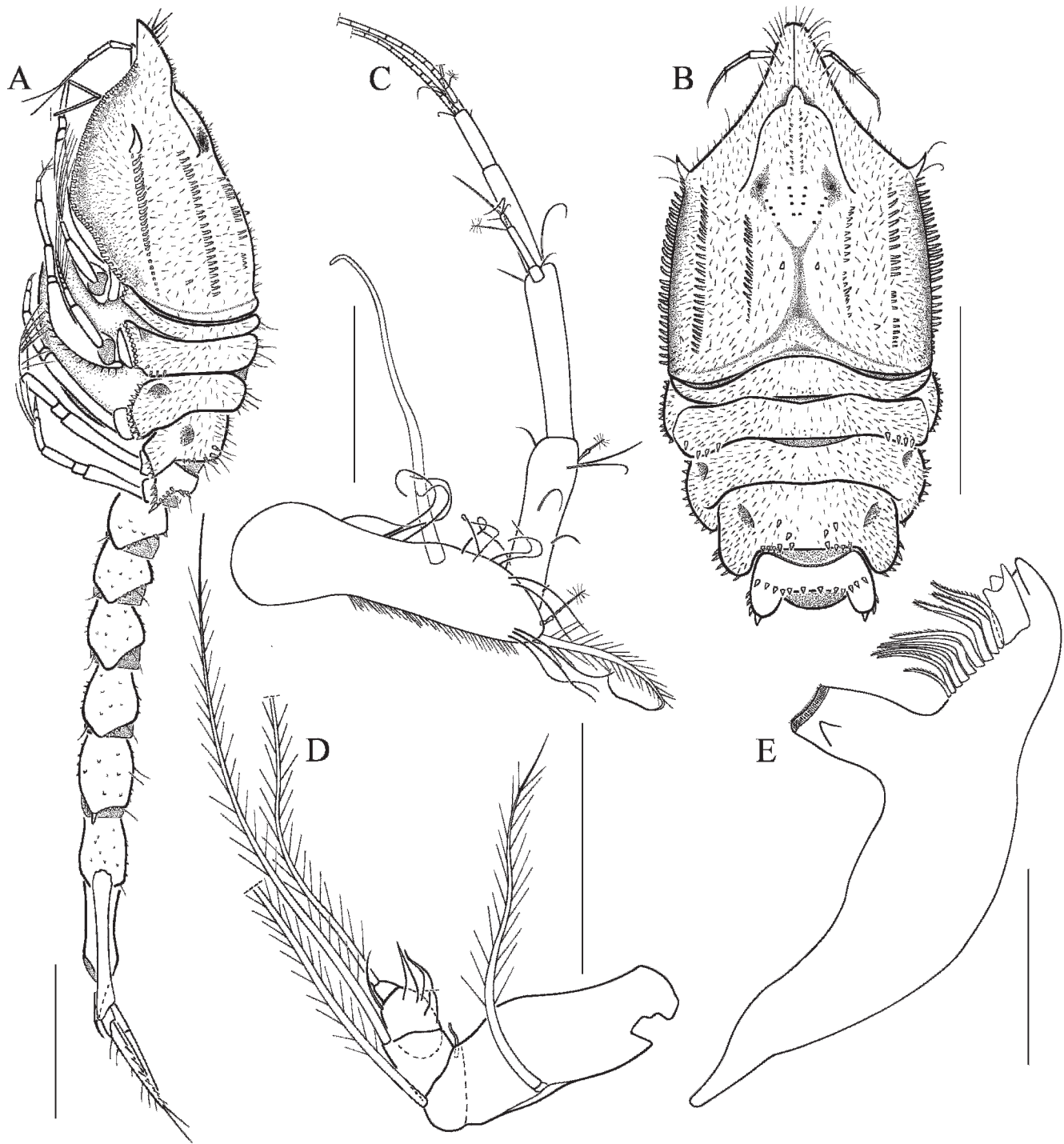


Fig. 2. *Diastylis szeptinata* n. sp., ovigerous female. A, habitus in lateral view; B, cephalothorax in dorsal view (A, B, holotype MNHNM 1960). C, antenna 1 (paratype MNHNM 1959a). D, antenna 2 (paratype MNHNM 1959b). E, left mandible (paratype MNHNM 1959a). Scale bars: 1 mm (A, B), 0.2 mm (C-E).

30 m, 13 December 2002: 50 ad. ♀♀, 92 subad. ♀♀, 30 ad. ♂♂, 48 subad. ♂♂, 19 juv., 27 manca (MNHNM 1958, MACN-In. 37725). Sta. 2005/03 L6, 35°11'54"S, 54°18'36"W, 29 m, 18 September 2005: 1 subad. ♂ (MNHNM 1955).—R/V "Dr. E. L. Holmberg". EH 09/99 L 56, 34°59'S, 55°19'W, 16 m, 16 November 1999, coll. Diego Giberto: 1 ad. ♂.—Puerto Quequén. Sta. 1, 38°41'34"S, 58°42'22"W, 40 m, 15 December 2005: 1

juv., 1 manca. Sta. 2, 38°41'27"S, 58°42'06"W, 39.5 m, 15 December 2005: 4 subad. ♀♀, 2 ad. ♂♂, 3 subad. ♂♂, 8 juv., 20 manca. Sta. 3, 38°41'22"S, 58°42'W, 38 m, 15 December 2005: 9 ad. ♀♀, 4 subad. ♀♀, 5 ad. ♂♂, 3 juv., 9 manca. Sta. 4, 38°42'49"S, 58°41'53"W, 45 m, 15 December 2005: 8 ad. ♀♀, 44 subad. ♀♀, 11 ad. ♂♂, 19 subad. ♂♂, 43 juv., 37 manca. Sta. 5, 38°43'39"S, 58°41'51"W, 47.5 m, 15 December 2005: 1 ad. ♀, 1 subad.

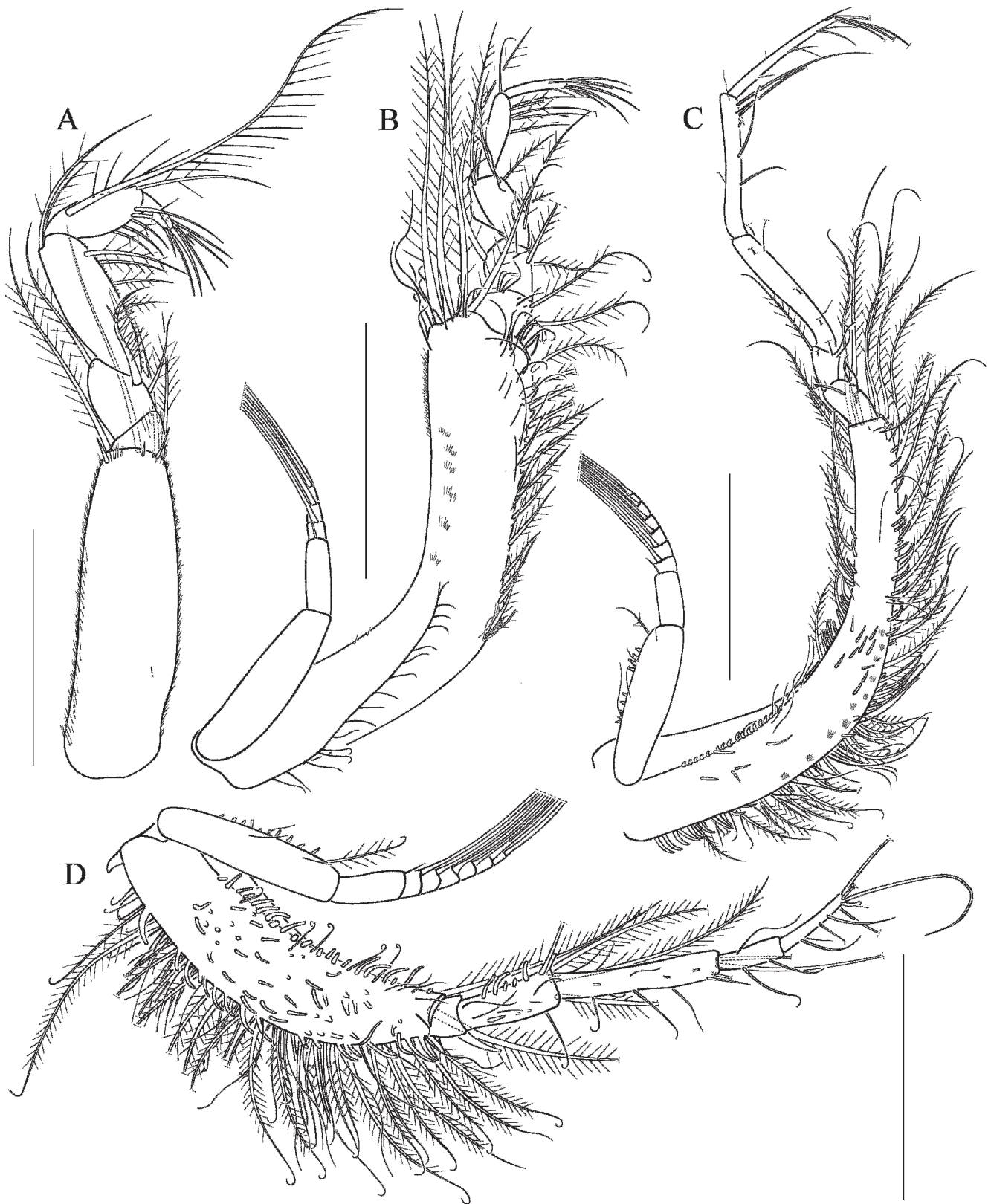


Fig. 3. *Diastylis sexpectinata* n. sp., ovigerous female (paratype MNHNM 1959a). A, maxilliped 2; B, maxilliped 3; C, pereiopod 1; D, pereiopod 2. Scale bars: 0.2 mm (A), 0.5 mm (B-D).

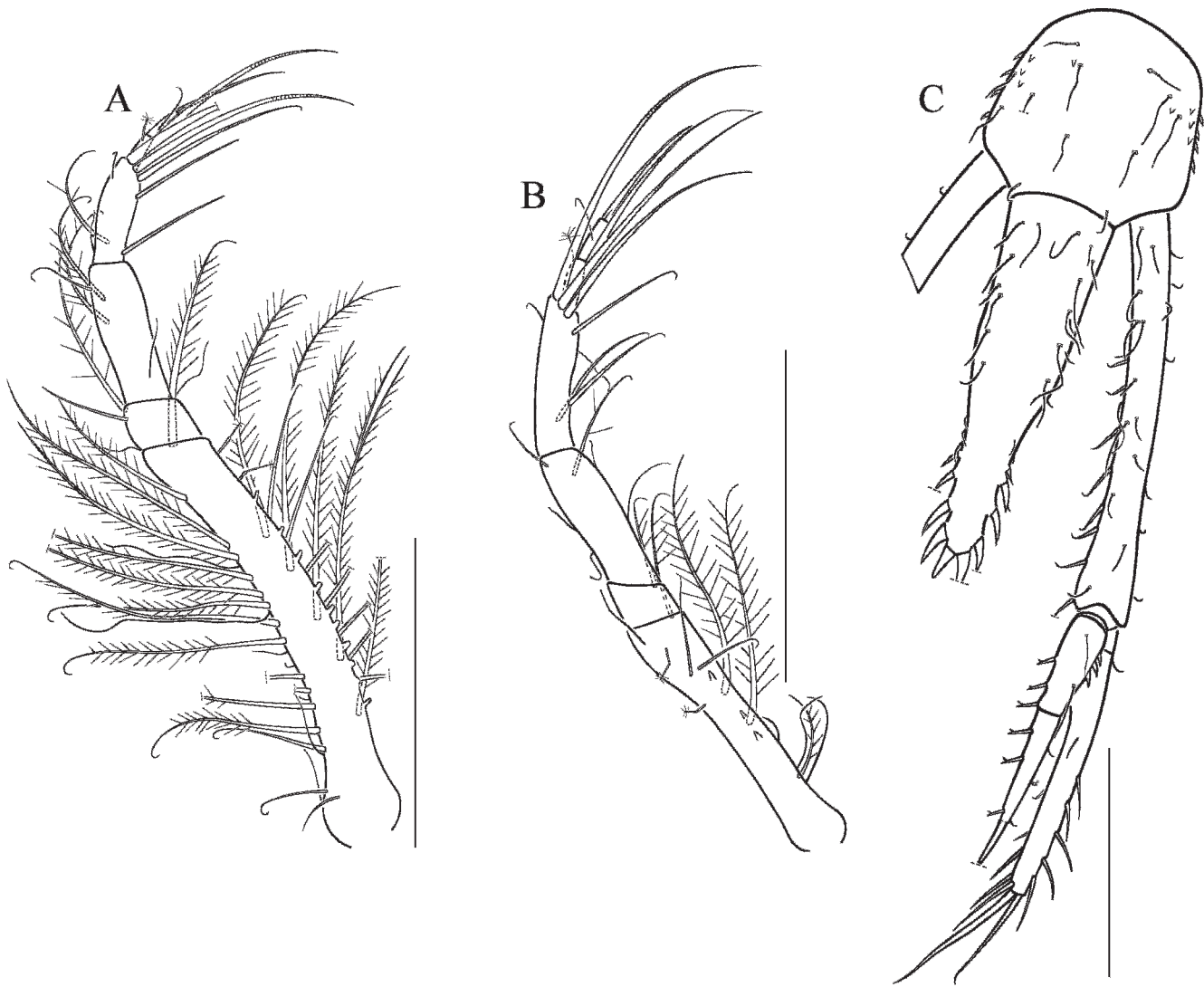


Fig. 4. *Diastylis sexpectinata* n. sp., ovigerous female (paratype MNHNM 1959a). A, pereopod 3; B, pereopod 5; C, last pleonite, telson, and uropod. Scale bars: 0.5 mm (A-C).

♀, 3 juv., 2 manca. Sta. 6, 38°46'35"S, 58°41'48"W, 54 m, 15 December 2005: 6 subad. ♀♀, 2 ad. ♂♂, 2 subad. ♂♂, 6 juv., 2 manca. Sta. 9, 38°47'13"S, 58°41'36"W, 51.7 m, 15 December 2005: 6 subad. ♀♀, 2 ad. ♂♂, 9 subad. ♂♂, 2 juv., 3 manca. Sta. 10, 38°47'47"S, 58°41'18"W, 52.6 m, 15 December 2005: 1 ad. ♀, 6 subad. ♀♀, 2 subad. ♂♂, 8 juv., 8 manca. Sta. 11, 38°50'32"S, 58°41'01"W, 58.7 m, 15 December 2005: 1 manca. Sta. 12, 38°50'33"S, 58°41'05"W, 57.7 m, 15 December 2005: 34 ad. ♀♀, 32 subad. ♀♀, 13 ad. ♂♂, 21 subad. ♂♂, 30 juv., 15 manca. Sta. 13, 38°50'39"S, 58°40'57"W, 60 m, 15 December 2005: 1 ad. ♀, 7 subad. ♀♀, 3 ad. ♂♂, 2 subad. ♂♂, 13 juv., 4 manca. Sta. 14, 38°50'45"S, 58°41'W, 60 m, 15 December 2005: 1 ad. ♀, 2 manca. Sta. 15, 38°41'38"S, 58°42'24"W, 40 m, 15 December 2005: 1 ad. ♀, 1 juv. Sta. 18, 38°36'44"S, 58°41'54"W, 25.3 m, 15 December 2005: 1 ad. ♀.—R/V "Shinkai Maru". Sta. SMVI-15, 40°31'18"S, 61°32'24"W, 36 m, 26 September 1978: 1 ad. ♀, 3 subad. ♀♀, 1 ad. ♂, 3 juv., 3 manca.—R/V "Walther Herwig".

Sta. 687, 41°56'48"S, 62°24'30"W, 68 m, 24 June 1978: 1 ad. ♂.

Diagnosis.—Integument moderately calcified, sides of carapace with a large horn and three rows of conical teeth (middle and uppermost rows less developed or absent in the adult male). Telson with 4-5 cuspidate setae in females (6-7 in males) on each side. Pereiopods 3 and 4 of female without rudimentary exopods. Uropod endopod of 2 articles, in females proximal article of uropod endopod with 3-4 teeth.

Description of Adult Female (Based on the Holotype MNHNM 1960 and the Paratypes MNHNM 1959a, b).—Total length (holotype): approximately 6.4 mm.

Cephalothorax covered with a dense matt of detritus (removed for descriptive purposes, see material and methods).

Carapace (Figs. 2A, B; 8A-D) approximately 1.3 times as long as wide. Surface showing a reticular pattern with

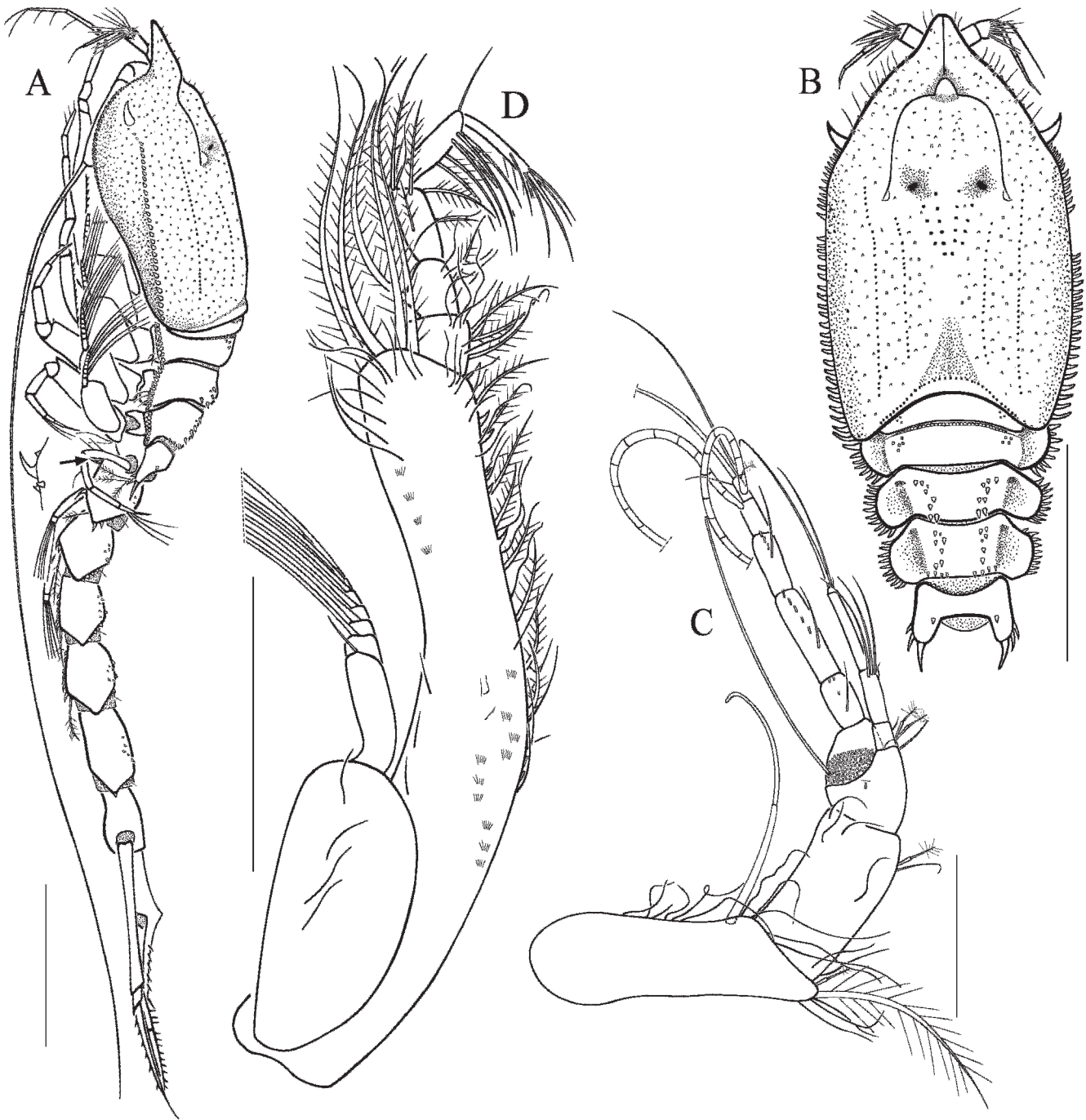


Fig. 5. *Diastylis sexpectinata* n. sp., adult male. A, habitus in lateral view, arrow points to mid-ventral tooth on first pleonite; B, cephalothorax in dorsal view (A, B, paratype MNHNM 1959d). C, antenna 1; D, maxilliped 3 (C, D, paratype MNHNM 1959e). Scale bars: 1 mm (A, B), 0.2 mm (C), 0.5 mm (D).

pits circled by small denticles (discovered only under high magnification using a transmitted light microscope or SEM). Superimposed to this reticulate network are many peg-like projections and small setae, giving a hairy appearance to the carapace. Sides with a large horn and 3 horizontal rows of large conical teeth (a few conical teeth may be also present between rows): 1) an inferior row runs from each horn to posterior margin of carapace, 2) a middle row starts at the same level as the inferior one and ends a short distance before posterior margin of carapace, and 3) an

upper row extends from somewhat behind frontal lobe to a short distance before posterior margin of carapace. These 3 rows of conical teeth are as shown in figures or less developed. Seen from above the lateral margins of carapace slightly convex (and almost parallel) behind the horns but markedly concave (and convergent) beyond them, i.e., bottleneck-shaped anteriorly. Ocular lobe approximately as long as wide, without lenses. Pseudorostrum approximately 3 times as long as ocular lobe. Lower margin of carapace crenulate. Anterolateral angle absent, antennal notch shallow.

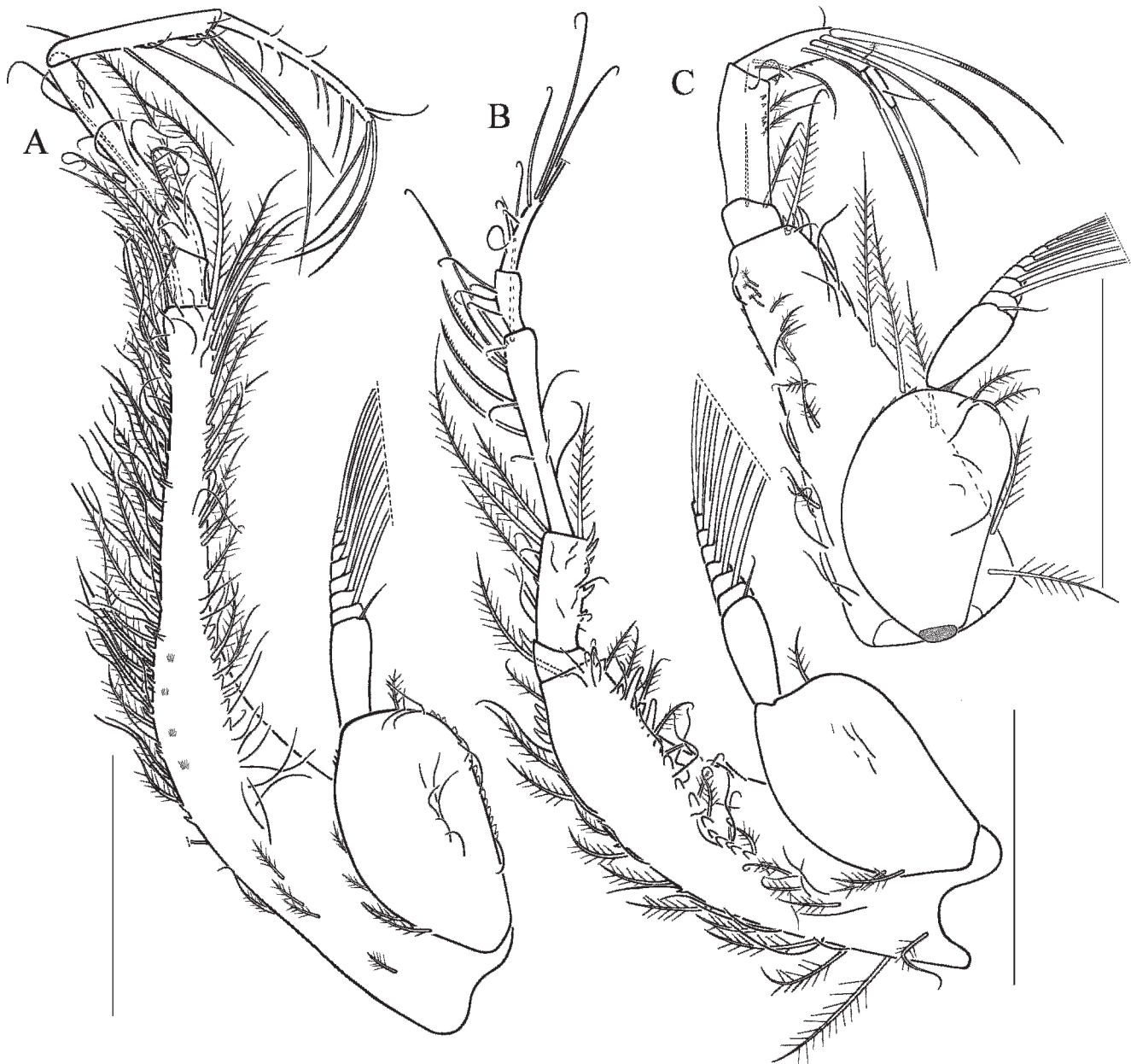


Fig. 6. *Diastylis sexpectinata* n. sp., adult male (paratype MNHNM 1959e). A, pereiopod 1; B, pereiopod 2; C, pereiopod 3. Scale bars: 0.5 mm (A-C).

Pereion (Figs. 2A, B; 8A, B). Approximately 0.7 as long as carapace. Pereionite lateral margins with large conical teeth.

Pleon (Fig. 2A). Slightly longer than cephalothorax.

Telson (Fig. 4C). Approximately twice as long as last pleonite, pre-anal part approximately 1.8 times as long as post-anal part (1.7-2.0 in other six paratypes measured); dorsal surface with thin sinuate setae, each side with 4 (5) cuspidate setae with sensory tip, distal end with 2 divergent cuspidate setae.

Antenna 1 (Fig. 2C). Peduncle, articles 1 and 2 with thin sinuate setae; article 1 slightly shorter than articles 2 and 3 combined, inner distal corner with 1 large setulate seta, outer margin with 1 large stiff seta (simple, incipiently annulate at distal half, with rounded tip) at 2/3-way along article; articles 2 and 3 subequal in length. Main flagellum

of 3 articles, article 1 approximately 1.3 times as long as article 2 and 3 combined, latter ones with 1 aesthetasc each. Accessory flagellum reaching half-way along article 1 of main flagellum; of 3 articles, article 2 the longest.

Antenna 2 (Fig. 2D). With 5 articles (first two articles barely separate), article 1 the longest, articles 3 and 4 subequal, article 5 minute. Articles 1-3 and 5 with a setulate seta each, equal or longer than whole antenna. Article 2 with 1 small finger-like seta on inner margin. Article 4, inner margin with 3 distinct teeth, outer distal corner with 1 small simple seta (longer and barely setulate in a third dissected specimen, MNHNM 1959c).

Left mandible (Fig. 2E). Pars incisive with a lacinia mobilis and 9 (10) setae. Right mandible, pars incisive with 11 (10) setae.

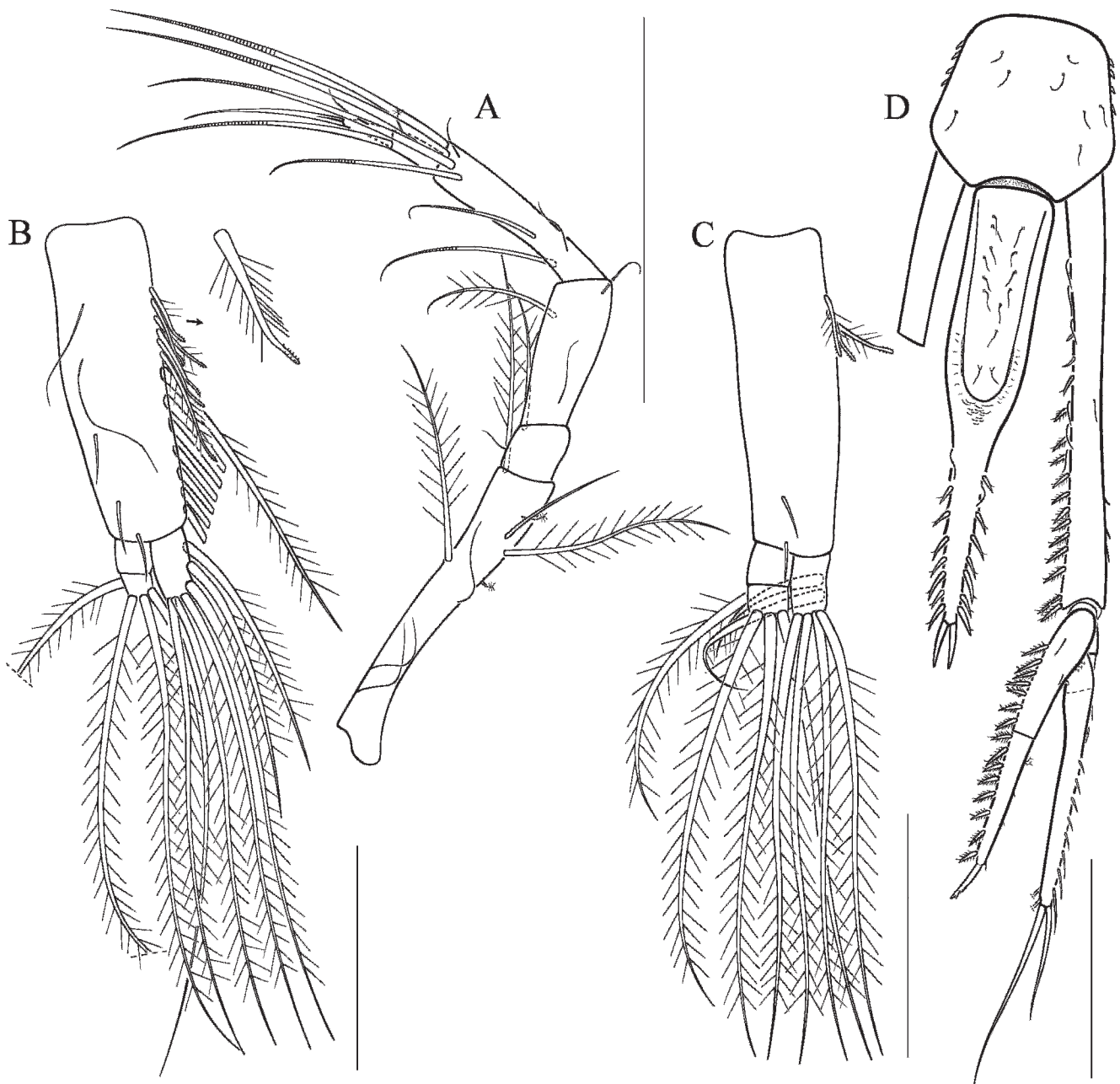


Fig. 7. *Diastylis sexpectinata* n. sp., adult male (paratype MNHNM 1959e). A, pereopod 5; B, pleopod 1; C, pleopod 2; D, last pleonite, telson, and uropod. Scale bars: 0.5 mm (A, D), 0.2 mm (B, C).

Maxilla 1. Typical of the genus. Outer endite with 13 cuspidate setae distally and 1 short seta on outer margin; inner endite with 4 unequal distal setae.

Maxilla 2. Typical of the genus. Outer endite with 2 simple and 3 serrate setae; inner endite with 1 simple and 3 serrate setae.

Maxilliped 1. Showing minor differences with *Diastylis granulata* Zimmer, 1921 (see Moretti and Roccatagliata, 2007), namely: basis with 5 setuloserrate setae in a row (6 in *D. granulata*), carpus with 5 setuloserrate setae on inner margin (7 in *D. granulata*).

Maxilliped 2 (Fig. 3A). Basis as long as the remaining articles together, with 3 short simple setae and 4 long

setulate setae distally. Merus with 3 setulate setae: 1 on inner distal corner (the thickest), 1 on outer distal corner and 1 on inner margin. Carpus with 2 unequal setulate setae on outer distal corner and 8 setulate setae on inner margin (only most dorsal ones drawn). Propodus, outer margin with 1 large setulate seta (longer than basis) at 1/3-way along article and 1 barely setulate seta distally; inner margin with 13 barely setulate setae (thicker ones serrulate, only most dorsal ones drawn). Dactylus with simple and serrulate setae distally.

Maxilliped 3 (Fig. 3B). Basis, ischium, merus, and carpus with several thin sinuate setae. Basis approximately 1.7 times as long as remaining articles together, ventral

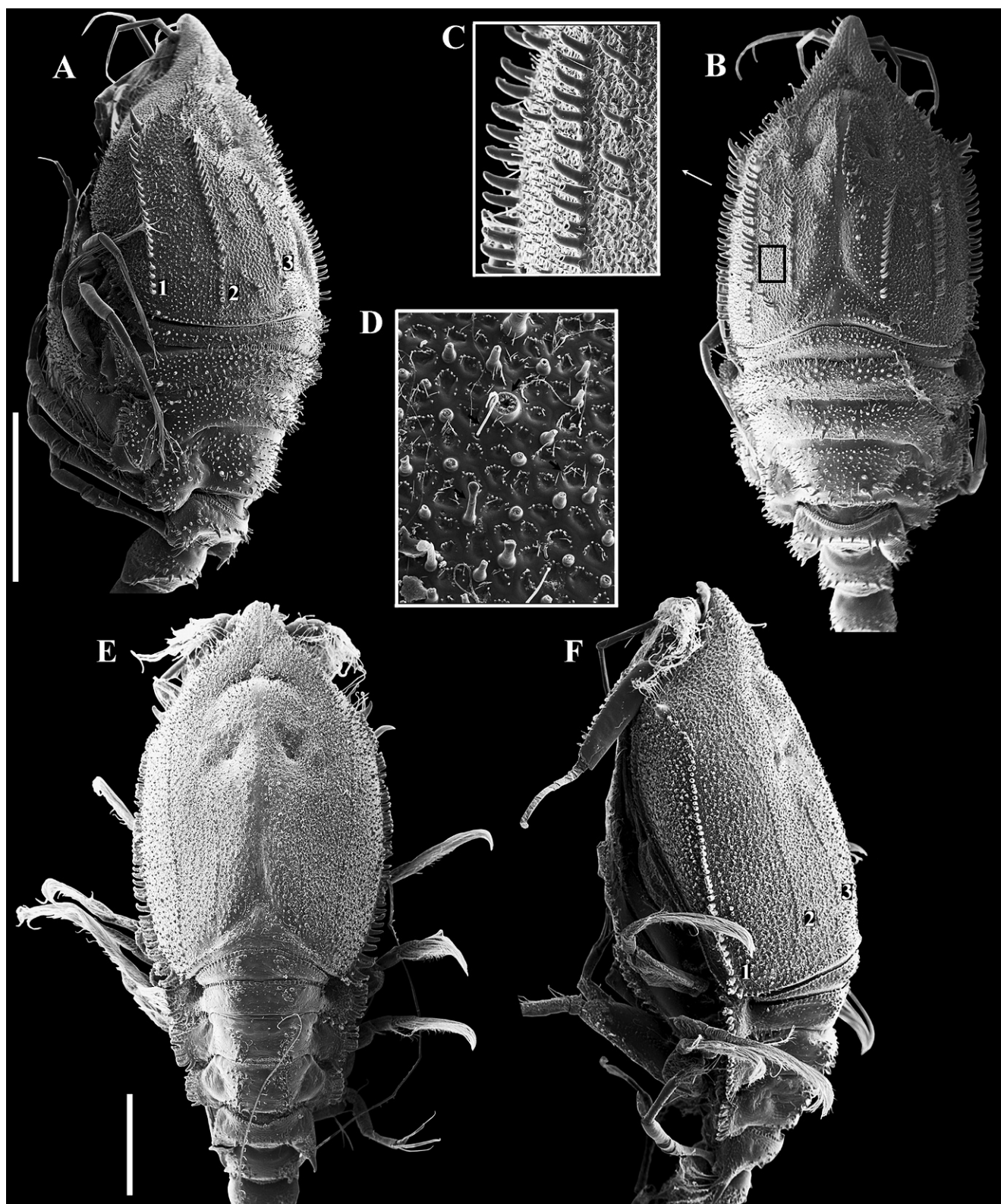


Fig. 8. *Diastylis sexpectinata* n. sp. SEM photos. Ovigerous female (paratype MACN-In. 37724a). A, cephalothorax in lateral view; B, cephalothorax in dorsal view; C, detail of the inferior and the middle rows of conical teeth; D, detail of the frame of Fig. 8B, arrows point: a simple seta; a conical tooth (broken); an intact peg-like projection; and a shallow pit encircled by minute denticles. Adult male. E, cephalothorax in dorsal view (MACN-In. 37725a); F, cephalothorax in lateral view (MACN-In. 37725b). Scale bars: 1 mm (A, B), 0.5 mm (E, F). A and B share the scale, E and F share the scale. Numbers stand for: 1, inferior row of conical teeth; 2, middle row of conical teeth; 3, upper row of conical teeth.

surface with a row of simple setae, inner margin with setulate setae and a few teeth (most distal one the largest), outer distal process barely developed, with 4 stout setulate setae. Ischium with 3 setulate setae (dorsal one short, not drawn) on inner margin. Merus with 2 setulate setae on inner margin and 1 strong setulate seta on outer margin. Carpus with 4 setulate setae on inner margin and 2 unequal setulate setae on outer distal corner. Propodus with 7 setulate setae (only 5 drawn, most dorsal ones omitted) on inner margin and 1 simple seta on outer distal corner. Dactylus with 2 subterminal setae and several terminal ones (2 of them serrulate). Exopod flagellum of 5-6 articles.

Pereiopod 1 (Fig. 3C). Basis, ischium, and merus with thin sinuate setae. Basis approximately as long as remaining articles together, with setulate setae on both margins and distally, and conical teeth on both margins and over the ventral surface (these are more abundant in other specimens examined). Ischium with 1-2 (0-2) setulate setae and merus with 1 setulate seta, both articles combined approximately 0.5 as long as carpus. Merus and carpus combined approximately 0.62 as long as propodus and dactylus combined. Dactylus slightly shorter than propodus. Last three articles with simple setae only. Exopod flagellum of 7 articles.

Pereiopod 2 (Fig. 3D). All articles with thin sinuate setae. Basis shorter than remaining articles together, with setulate setae on inner margin and distally, and conical teeth and simple setae on both margins and over ventral surface. Ischium and merus combined approximately 0.8 as long as carpus. Ischium with 1 large tooth on inner distal corner. Merus outer margin and ventral surface with conical teeth, dorsal surface with 3 large setulate setae distally. Carpus approximately as long as propodus and dactylus together, inner margin with short simple setae and dorsal surface with 3 long simple setae distally (all three broken). Propodus and dactylus with simple setae only. Exopod flagellum of 7 articles.

Pereiopod 3 (Fig. 4A). Basis, ischium, merus, and carpus with thin sinuate setae. Basis approximately 1.2 times as long as remaining articles together, with 2 rows of long setulate setae, 1 row of simple setae (most of them broken), 1 row of conical teeth (all broken), and a few broom setae. Ischium with 1 simple seta and 1 setulate seta (both setulate in another paratype examined). Merus with 1 simple and 2 setulate setae. Carpus approximately 0.75 as long as merus, with 2 simple setae (one of them barely setulate in another paratype examined) basally, and a fan of 4 simple setae (becoming larger towards distal end) distally. Propodus with 1 simple seta and 1 broom seta distally. Dactylus with 1 short simple seta half-way along article and 2 simple setae (1 minute, 1 large) distally. Without exopod.

Pereiopod 4. As third pereiopod except for: basis approximately 0.8 as long as remaining articles together, with a few setae and conical teeth.

Pereiopod 5 (Fig. 4B). Basis, ischium, merus, and carpus with thin sinuate setae. Basis approximately 0.7 as long as remaining articles together; with a few conical teeth, long setulate setae, simple setae and broom setae. Ischium with 1 setulate seta. Merus with 1 simple seta and 1 barely setulate seta. Carpus approximately as long as merus, with 2 simple

setae basally and a fan of 4 simple setae (becoming larger towards distal end) distally. Propodus with 1 simple seta and 1 broom seta distally. Dactylus with 1 small simple seta half-way along article and 2 simple setae (1 minute, 1 large) distally. Without exopod.

Uropod (Fig. 4C). Peduncle approximately 1.13 (1.15) times as long as telson (excluding distal cuspidate setae), with 7-8 (9) simple setae on inner margin and several thin sinuate setae. Endopod of two articles: first article slightly shorter than second, with 2-3 cuspidate setae with sensory tip on inner margin, 3 (4) teeth on outer margin, and a few thin sinuate setae on dorsal surface; second article, with 3 cuspidate setae with sensory tip on inner margin, and 1 cuspidate seta with sensory tip distally that reaches end of exopod and is indistinctly separated from peduncle (only a feeble line remains). Exopod approximately 1.3 (1.35) times as long as endopod, with simple setae on both sides and 2 long simple setae distally.

Description of Adult Male (Based on the Paratypes MNHNM 1959d, e, f).—Total length (paratype MNHNM 1959d): approximately 6.2 mm.

Cephalothorax surface not covered with a mat of detritus.

Carapace (Figs. 5A, B; 8E, F) as in female except for: approximately 1.5 times as long as wide, surface with spiniform granules superimposed to reticulate pattern, simple setae scarce, peg-like projections lacking. Middle and uppermost rows of conical teeth poorly developed or absent. Carapace outline in dorsal view: angularity at horns level less marked than in female and hence anterior part of carapace not bottleneck-shaped. Ocular lobe wider. Lower margin of carapace serrate anteriorly.

Pereion (Figs. 5A, B; 8E, F). Approximately 0.6 as long as carapace. Pereionite 1 visible only dorso-laterally (ventro-lateral expansion of pereionite 2 in contact with carapace). Pereionites 2-4 margined with large conical teeth, pereionite 5 with 3 large conical teeth on distal outer corner and a sharp tooth on mid-ventral surface.

Pleon (Fig. 5A). Approximately 0.8 as long as cephalothorax. Pleonite 1 with a sharp tooth on mid-ventral surface.

Telson (Fig. 7D). Approximately 2.7 times as long as last pleonite, pre-anal part slightly shorter than the post-anal part, dorsal surface with thin sinuate setae, each side with 7 (6) cuspidate setae with sensory tip, distal end with 2 divergent cuspidate setae.

Antenna 1 (Fig. 5C). Peduncle, articles 1 and 2 with thin sinuate setae; article 1 slightly longer than articles 2 and 3 combined, large stiff seta closer to distal end, otherwise as in female; article 2 approximately twice as long as article 3. Main flagellum of 6 articles; article 1 the widest and with many thin aesthetascs (1 fully drawn, only basal articulations indicated for the others); article 3 the longest, following articles becoming shorter towards distal end of flagellum; articles 2-4 with a row of simple setae; articles 5 and 6 with 1 aesthetasc each. Accessory flagellum almost reaching distal end of article 3 of main flagellum; of 4 articles, article 3 the longest, article 4 minute.

Maxilliped 2. As in female except for: basis distinctly wider at mid-length and markedly constricted basally; of

the 3 short distal setae, the closest to inner margin setulate. Propodus, inner margin with additional setae.

Maxilliped 3 (Fig. 5D). As in female except for: basis approximately twice as long as remaining articles together. Ischium with 3-4 setulate setae (dorsal one short, not drawn) on inner margin. Propodus with 8-9 setulate setae (only 6 drawn, most dorsal ones omitted) on inner margin. Dactylus with 3 subterminal setae and several terminal ones (1-2 of them serrulate). Exopod flagellum of 7 articles.

Pereiopod 1 (Fig. 6A). As in female except for: basis longer than remaining articles together. Exopod larger, flagellum of 8 articles. Note: propodus and dactylus twisted 180° in the specimen drawn.

Pereiopod 2 (Fig. 6B). As in female except for: basis slightly longer than remaining articles together, conical teeth less abundant. Ischium and merus combined approximately 0.7 as long as carpus. Merus with 4 long setulate setae. Carpus approximately 1.5 times as long as propodus and dactylus together, inner margin with 3 serrulate setae. Exopod flagellum of 8 articles.

Pereiopod 3 (Fig. 6C). Basis, ischium, merus, and carpus with thin sinuate setae. Basis broad, approximately 1.2 times as long as remaining articles together, inner margin with long setulate setae and a few teeth (one of them huge), outer margin with short setulate setae and a few broom setae distally. Ischium with 2 (3) setulate setae. Merus with 1 simple and 2 setulate setae. Carpus approximately 0.8 as long as merus, with 2 simple setae basally, and a fan of 4 simple setae (becoming larger towards distal end) distally. Propodus with 1 simple seta and 1 broom seta distally. Dactylus with 1 short simple seta half-way along article and 2 simple setae (1 minute, 1 large) distally. Exopod robust, flagellum of 8 articles.

Pereiopod 4. As third pereiopod except for: basis approximately as long as remaining articles together, with a row of conical teeth on outer margin, and fewer setae.

Pereiopod 5 (Fig. 7A). Basis, ischium, merus, and carpus with thin sinuate setae. Basis approximately 0.6 as long as remaining articles together, with long setulate setae, 1 simple seta, and 1 broom seta. Ischium with 1 setulate seta. Merus with 1 simple seta and 1 setulate seta. Carpus approximately 0.75 as long as merus, with 2 simple setae basally and a fan of 4 simple setae (becoming larger towards distal end) distally. Propodus with 1 simple seta and 1 broom seta distally. Dactylus with 1 small simple seta half-way along article and 2 simple setae (1 minute, 1 large) distally. Without exopod.

Pleopod 1 (Fig. 7B). Peduncle, inner margin with 5-6 (6) coupling setae with setules basally and minute hooks distally (see detail), and 6-7 (7-8) long setulate setae (only one seta fully drawn), anterior surface with a few thin sinuate and simple setae. Endopod and exopod with 6 and 4 long setulate setae, respectively. Endopod outer margin with 2 broom setae (not drawn).

Pleopod 2 (Fig. 7C). As first except for: inner margin with 4 (5-6) coupling setae only (one broken not drawn), anterior surface with fewer simple setae. Endopod, first two proximal setulate setae shorter, stouter and turned outwards.

Uropod (Fig. 7D). Peduncle approximately as long as telson (excluding distal cuspidate setae) with a few thin

sinuate setae, inner margin with 16 (15) bipectinate setae (i.e., cuspidate setae with two rows of denticles and a sensory tip). Endopod of two articles: first article slightly shorter than second, with 7-8 (8-9) bipectinate setae on inner margin; second article with 8-9 (9-10) bipectinate setae on inner margin, and 1 cuspidate seta with sensory tip distally that extends beyond tip of exopod and is indistinctly separated from peduncle (only a feeble line remains). Exopod approximately 1.07 times as long as endopod, with simple setae on both sides and 2 long simple setae distally.

Etymology.—The specific name is a combination of the Latin words *sex* (six) and *pectinata* (comblike), and refers to the six rows of conical teeth present on the carapace of this species.

Distribution.—From São Paulo State (Brazil) to Río Negro Province (Argentina), between 11 to 68 m depth (see Fig. 1).

Remarks.—*Diastylis sexpectinata* is closely related to other three South-West Atlantic species: *D. granulata* Zimmer, 1921, *D. argentata* Calman, 1912, and *D. fimbriata* Sars, 1873, all of them provided with uropodal endopods of two articles. The former two species and *D. sexpectinata* can be easily separated using the dichotomous key presented below. Regarding *D. fimbriata*, the description is incomplete and the type material is apparently lost. However, based on the figures presented by Sars (1873), in *D. fimbriata* the carapace of both sexes lacks horns, and the endopod outer margin of the female uropod does not have a row of teeth. Furthermore, *D. sexpectinata* and *D. fimbriata* apparently have different bathymetric distributions. Sars (loc. cit.) wrote “Habitat in oceano Atlantico meridionali longit. 41°47' occident. latit. 23°41' meridion.” Since depth at these coordinates is approximately 250 m (source: Google Earth, 2009), it seems that *D. fimbriata* inhabits deeper waters than *D. sexpectinata*.

The specimens collected off São Paulo State are somewhat smaller (1.39-1.90 mm CL) than those from Argentina and Uruguay (1.72-2.23 mm CL). This geographic variation is probably related to the latitudinal temperature gradient occurring along the range of distribution of this species.

Diastylis hammoniae Zimmer, 1902 (Figs. 9-10)

?*Leptostylis manca* G. O. Sars, 1873, 21-24, figs. 24-28 [description of a manca from the mouth of the Río de la Plata].

Leptostylis manca G. O. Sars?: Zimmer, 1902, 8-10, figs. 11-14 [description of a juvenile ♀ from the mouth of the Río de la Plata, tentatively assigned to Sars' species].

?*Diastylis manca*: Zimmer, 1902, 183.—Brandt et al., 1999, 545 [Beagle Channel, new record].—Mühlenhardt-Siegel, 1999, 297 [record already mentioned in Brandt et al., 1999].

Leptostylis mancus: Stebbing, 1913, 123, 124 (Partim?) [key, brief description].

Leptostylis (?) *mancooides* Băcescu-Meşter, 1967, 273, 274 [erected to accommodate *L. manca sensu* Zimmer, 1902].—Băcescu, 1992, 344 [catalogue].

Diastylis hammoniae Zimmer, 1902, 6-8, figs. 8-10 [description of an adult ♀ from Cape Blanco, Patagonia].—Stebbing, 1913, 90, 93 [key, diagnosis based on the original description].—Zimmer, 1913, 478 [list].—Băcescu, 1992, 292 [catalogue].—Day, 1980, 265 [key].—

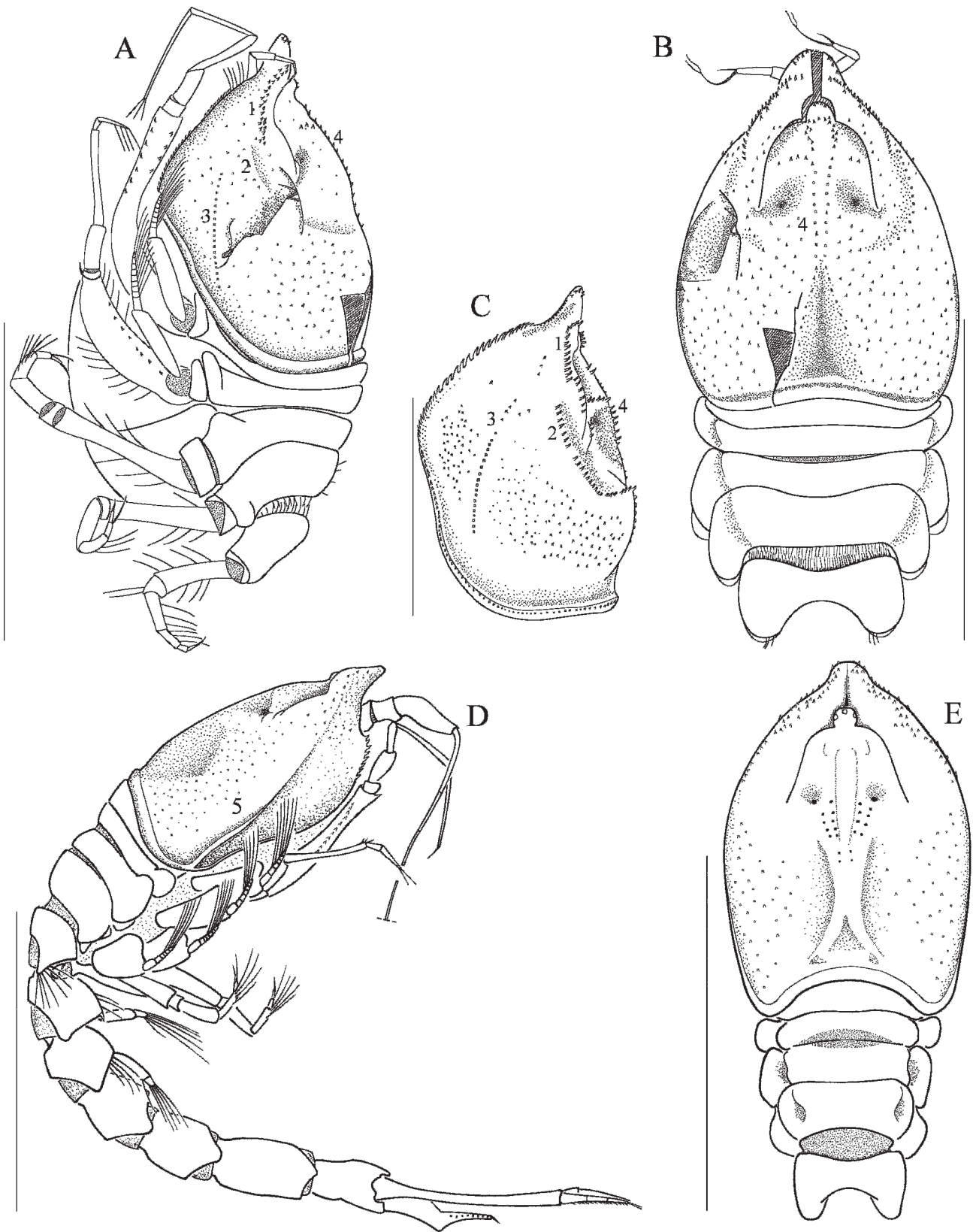


Fig. 9. *Diastylis hammoniae* Zimmer, 1902. A, B, holotype ZMH-K 16052. A, cephalothorax in lateral view; B, cephalothorax in dorsal view. C, subadult female MACN-In. 37726a, carapace in lateral view. D, E, adult male MACN-In. 37726b. D, habitus in lateral view; E, cephalothorax in dorsal view. Scale bars: 5 mm (A, B, D, E), 2.5 mm (C). Numbers stand for: 1, pseudorostral row of teeth; 2, arched row of teeth; 3, inferolateral row of teeth; 4, mid-dorsal double row of teeth; 5 inferolateral ridge.

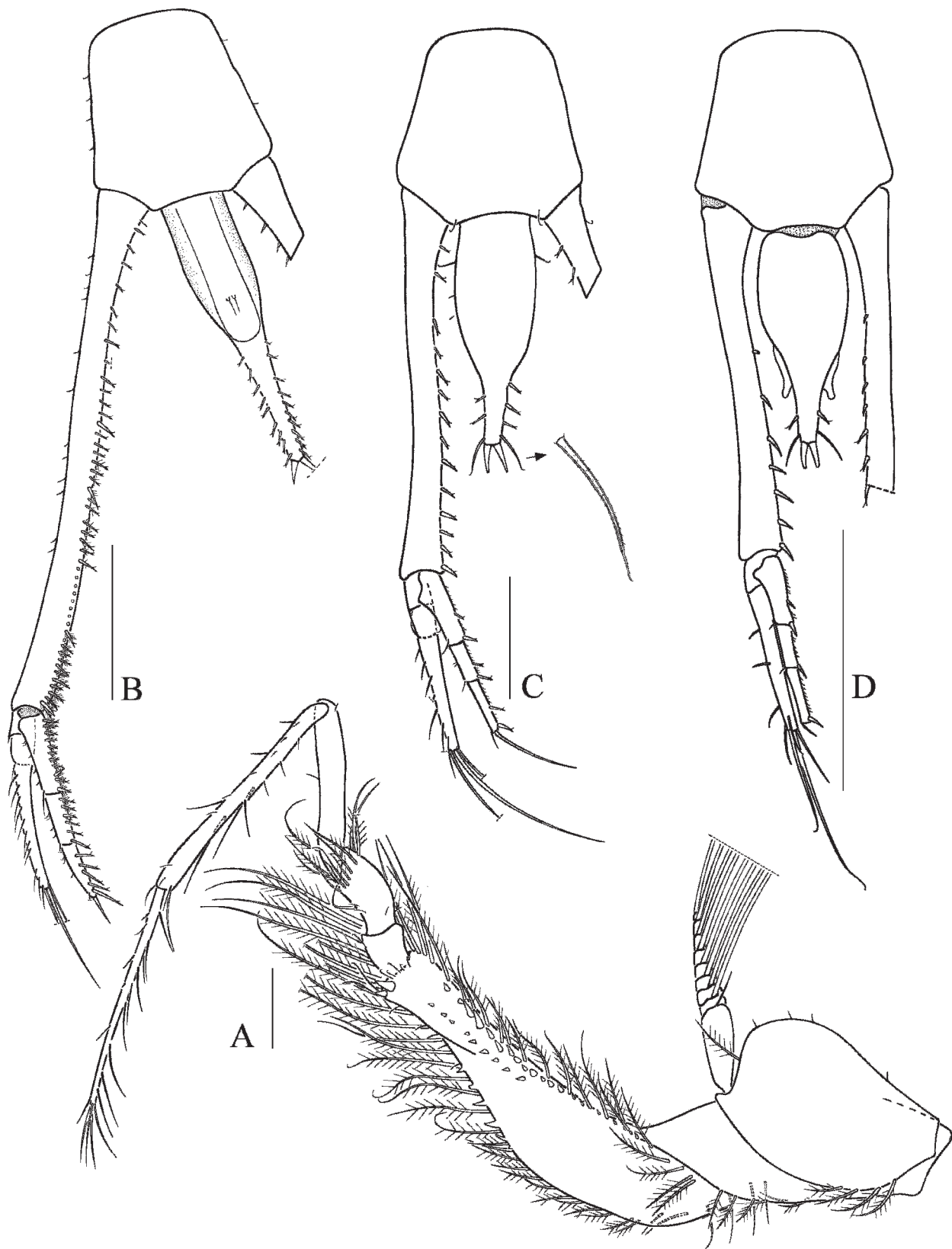


Fig. 10. *Diastylis hammoniae* Zimmer, 1902. A, B, adult male MACN-In. 37726b. A, pereiopod 1; B, last pleonite, telson, and uropod. *Diastylis hammoniae* Zimmer, 1902. C, juvenile female ZMH-K 42391a, last pleonite, telson, and uropod. "*Leptostylis manca* G. O. Sars?". D, juvenile ZMH-K 16077, last pleonite, telson, and uropods (from right uropod only proximal 4/5 parts of peduncle remains). Scale bars: 0.5 mm (A, C, D), 1 mm (B).

Błażewicz-Paszkowycz and Heard, 2005, 650-654, figs. 1, 2 [description of a subadult ♀ from Subantarctic waters].

Material Examined.—

Type Material.—*Diastylis hammoniae* Zimmer, 1902. Cape Blanco, East Patagonia, 25 April 1883, 80 fath. [146 m], Capt. Ringe: 1 ♀ with fully developed marsupium (holotype, ZMH-K 16052). 43°06'S, 60°00'W, 1 May 1888, 56 fath. [102 m], Capt. Kophamel: 1 ♀ with fully developed marsupium [erroneously reported as a non-marsupial ♀ by Błażewicz-Paszkowycz and Heard, 2005] (paratype, ZMH-K 16053).—*Leptostylis manca* G. O. Sars? Zimmer, 1902: 38°00'S, 56°00'W, 1 May 1888, 52 fath. [95 m], Capt. Kophamel: 1 ♀ juvenile (ZMH-K 16077).

Additional Material.—R/V “Shinkai Maru”. Sta. SMV-19, 40°30'12"S, 58°30'30"W, 88 m, 27 August 1978: 1 ad. ♀. —R/V “Puerto Deseado”. GEF Patagonia I, EG 14, 40°52'S, 58°45'W, 86 m, 11 October 2005: 2 subad. ♀♀, 1 ad. ♂, 1 subad. ♂. GEF Patagonia II, EG 13, 41°00'S, 57°19'W, 90 m, 12 March 2006: 1 ad. ♀, 3 subad. ♀♀, 1 ad. ♂ (MACN-In. 37726). GEF Patagonia II, EG 27, 47°26'S, 61°49'W, 130 m, 16 March 2006: 1 subad. ♀.—R/V “Dr. E. L. Holmberg”. EH 04/01, 42°01'S, 58°02'W, 227 m, 26 April 2001, stomach content of the Patagonian skate *Bathyraja macloviana* (Norman, 1937): 1 subad. ♀. EH 08/01, 44°06'57"S, 60°14'45"W, 106 m, stomach content of *Bathyraja macloviana*, coll. Lorena Scenna: 2 ad. ♀♀, 1 subad. ♀. EH (accurate collecting data not available, but locations, depths and dates fall between 42°-48°S, 57°-62°W, 102-136 m, and 2003-2005, respectively), stomach contents of three white-dotted skates *Bathyraja albomaculata* (Norman, 1937), coll. Valeria Shimabukuro: 2 ad. ♀♀, 1 subad. ♀.—R/V “Cap. Oca Balda”. OB-05/07, Sta. 365, 46°02'16"S, 62°19'55"W, 99 m, 4 September 2007, stomach content of the horsefish *Congiopodus peruvianus* (Cuvier, 1829): 17 juv. OB-06/89, collecting data not available, stomach content of the Argentine hake *Merluccius hubbsi* Marini, 1933, coll. Marcelo Pérez: 3 ad. ♂♂ (MACN-In. 37727).—Beagle Channel, Lapataia Bay, Sta. L-2, 54°52'S 68°30'W, 82.3-94.5 m, 6 September 1999, coll. Carolina Romero: 1 juv.—R/V “Victor Hensen”. Beagle Channel, Pta. Yámana. Sta. 1124, 54°58'54"S, 69°02'06"W, 202 m, 6 November 1994: 1 ad. ♀, 3 subad. ♀♀, 1 subad. ♂ (ZMH-K 41053). Magellan Strait, Bahía Voces. Sta. 874, 53°43'S, 70°56'06"W, 335 m, 25 October 1994: 1 juv. (ZMH-K 41053). Sta. 887, 53°42'12"S, 70°57'12"W, 100 m, 26 October 1994: 1 ad. ♀, 5 subad. ♀♀, 2 subad. ♂♂, 13 juv. (ZMH-K 42391).

Diagnosis.—Carapace with teeth all over, some of them arranged in rows, i.e., 1) a short row at each pseudorostral lobe (usually badly defined or absent), 2) an arched row that runs backwards and upwards from each pseudorostral lobe to disappear before getting in contact with its fellow dorsally, 3) an inferolateral row, and 4) a mid-dorsal double row. Adult males, carapace covered with small granules that turn into teeth on pseudorostral lobe, without rows of teeth but with a strong inferolateral ridge. Telson, adult female with 0-3 cuspidate setae follow by 4-9 slender setae,

adult male with 9-12 cuspidate setae (slender setae lacking). Pereiopod 1 long, extending well beyond the tip of pseudorostrum. Pereiopods 3 and 4 of female with rudimentary exopods. Uropod endopod of 3 articles.

Brief Redescription of Adult Female (Based on the Holotype ZMH-K 16052).—Total length: approximately 19.2 mm.

Carapace (Figs. 9A, B) approximately 1.2 times as long as wide, whole surface rough with small teeth, some of them distinctly arranged in rows, viz. 1) an ill-defined row starting at pseudorostrum and running backwards parallel to frontal lobe suture for a short distance (this row is also imprecise in the paratype ZMH-K 16053, but neat in the subadult female MACN-In. 37726a, see Fig. 9C); 2) an arched row running obliquely upward from each pseudorostral lobe to disappear before reaching mid-dorsal line of carapace; right and left arched rows enclose a very shallow excavated area in front of them; in the holotype the teeth are broken and the carapace fractured; in the paratype most teeth are also broken, in the subadult female MACN-In. 37726a teeth are entire and rows more evident (see Fig. 9C); 3) an inferolateral row starting behind the pseudorostral lobe and ending before reaching posterior margin of carapace (teeth broken in the holotype, the paratype, and the subadult female above mentioned); 4) two contiguous mid-dorsal rows on anterior half of carapace, diverging at right angle on frontal lobe to form together a transverse row (teeth are broken in the holotype and paratype, and less damaged in the subadult female MACN-In. 37726a). Ocular lobe wider than long, without lenses. Pseudorostrum approximately twice as long as ocular lobe. Lower margin of carapace serrate anteriorly. Anterolateral angle absent, antennal notch hardly indicated.

Pereion (Figs. 9A, B). Approximately 0.6 as long as carapace.

Pleon. Approximately 1.2 times as long as cephalothorax.

Telson. Approximately 1.2 times as long as last pleonite, pre-anal part approximately 1.5 times (2 times in the paratype) as long as post-anal part, each side with 1 cuspidate seta with sensory tip and 9 slender setae (0 cuspidate and 7 slender setae in the paratype), distal end with 2 divergent cuspidate setae (see figs. 8 and 10 in Zimmer, 1902).

Brief Description of Adult Male (Based on the Specimen MACN-In. 37726b).—Total length: approximately 17.4 mm.

Carapace (Figs. 9D, E) approximately 1.3 times as long as wide, surface covered with small granules that became forwardly pointed teeth on pseudorostral lobes. Each side with a strong inferolateral ridge running from posterior margin to about 2/3-way along carapace. Ocular lobe approximately as long as wide, with lenses. Pseudorostrum approximately twice as long as ocular lobe. Lower margin serrate anteriorly. Anterolateral angle not prominent, antennal notch shallow.

Pereion (Figs. 9D, E). Approximately 0.7 as long as carapace. Pereionite 5, postero-lateral angle rounded in dorsal view.

Pleon (Fig. 9D). Approximately 1.2 times as long as cephalothorax.

Telson (Fig. 10B). Approximately 1.5 times as long as last pleonite, pre-anal part approximately as long as post-anal part, each side with 9-10 (9-12) cuspidate setae with sensory tip, distal end with 2 divergent cuspidate setae (one of them broken).

Pereiopod 1 (Fig. 10A). Basis approximately 0.75 as long as remaining articles together, with setulate setae and rows of teeth. Ischium and merus combined approximately 0.7 as long as carpus. Merus with 2 simple setae on inner margin and several setulate setae distally. Merus and carpus combined approximately 0.5 as long as propodus and dactylus combined. Dactylus extremely long, slightly shorter than propodus. Last three articles with simple setae only. Exopod flagellum of 9 articles.

Uropod (Fig. 10B). Peduncle almost twice as long as telson (excluding distal cuspidate setae), with 43-48 (51-52) cuspidate setae with sensory tip on inner margin (setae gradually turn from simple to bipectinate towards distal end). Endopod of 3 articles: first article approximately 1.5 times as long as second, second article slightly shorter than third. First, second and third articles with 11 (12-13), 5-6 (6-7) and 4-5 (5) cuspidate setae with sensory tip on inner margin, respectively; setae gradually change from bipectinate to simple from first to third articles; distal end of third article with 1 simple seta. Exopod shorter than endopod (reaching half of third article of endopod), with 2 rows of simple setae on outer margin (only dorsal one drawn), 2 unequal simple setae distally (1 of them broken), and 1 subterminal simple seta on inner margin (broken).

Description of Telson and Uropod of Juvenile Female (Based on the Specimen ZMH-K 42391a).—Total length: approximately 8.9 mm.

Telson (Fig. 10C). Approximately 1.2 times as long as last pleonite, pre-anal part approximately twice as long as post-anal part, each side with 2-3 cuspidate setae with sensory tip and with 1 subterminal slender seta, and distal end with 2 divergent cuspidate setae.

Uropod (Fig. 10C). Peduncle approximately 1.7 times as long as telson (excluding distal cuspidate setae), inner margin with 14-16 cuspidate setae with sensory tip. Endopod of 3 articles: first article approximately twice as long as second, second article approximately 0.7 as long as third. Each article with 2 cuspidate setae with sensory tip on inner margin; third article with 1 long simple seta distally. Exopod slightly longer than endopod, with 2 rows of simple setae on outer margin (only dorsal one drawn), 2 unequal simple setae distally (1 of them broken), and 1 subterminal simple seta on inner margin (broken).

Brief Redescription of the Specimen Identified by Zimmer (1902) as “*Leptostylis manca* G. O. Sars?” (ZMH-K 16077).—Total length: approximately 8.5 mm (not 10.5 mm as reported by Zimmer, 1902).

The specimen is partially damaged, the right first pereiopod is dislodged and the left first pereiopod is missing. Of the right uropod only the proximal 4/5 of the peduncle remains.

Carapace similar to that of the females of *D. hammoniae* herein described, rows of teeth well developed, like those shown in Fig. 9C. Zimmer (1902) omitted to describe the oblique row of teeth that runs on each side of the carapace. Pseudorostrum not constricted at the base, i.e., not as shown by Zimmer (1902) in his fig. 11.

Telson (Fig. 10D). Pre-anal part approximately 3 times as long as post-anal part; with a pair of slender setae preceded by a pair of cuspidate setae with sensory tip. Zimmer (1902) reported that the telson has “zwei Paar Seitendornen” but in his figs. 11–14 these “lateral spines” look like slender setae. Distal end with 2 thick cuspidate setae.

First pereiopod. Distal articles long, extending well beyond the tip of the pseudorostrum.

Uropod (Fig. 10D). Peduncle approximately 1.7 times as long as telson (excluding distal cuspidate setae). Zimmer (1902) reported that each peduncle has 9 “spines” (= cuspidate setae with sensory tip), however, only 7 remain on each peduncle. Endopod slightly shorter than exopod; first, second, and third articles with 2 (not 1 as reported by Zimmer, 1902), 1, and 1 cuspidate setae, respectively; third article, long distal seta missing.

Distribution.—Off Buenos Aires Province and Patagonia, Beagle Channel, Magellan Straits and Burdwood Bank, between 82 m and 335 m depth (see Fig. 1).

Remarks.—In addition to the secondary sex differences proper of all cumaceans, the members of this species are sexually dimorphic regarding the chaetotaxy of the telson: the adult females have 4-9 slender setae usually preceded by a few cuspidate setae on each side, whereas the adult males have only cuspidate setae (see fig. 10 in Zimmer, 1902; fig. 1J in Błażewicz-Paszkowycz and Heard, 2005; and Fig. 10B herein). In females the number of slender setae increases as they became older, whereas in males slender setae disappear in the final maturation molt (see Table 1).

Key to Species of *Diastylis* from Continental Shelves of Argentina and Uruguay

This key is useful for the identification of adult specimens. When the sex is not stated the feature applies equally to females and males. *Diastylis manca* (Sars, 1873) was keyed out because its description is based on a single manca specimen, and thus it is insufficient for morphological comparisons.

1. Uropod endopod of 2 articles; carapace with a pair of large anterolateral horns; females without exopods on pereiopods 3 and 4 2
- 1'. Uropod endopod of 3 articles; carapace without anterolateral horns; females with reduced exopods on pereiopods 3 and 4 4
2. Each side of carapace with short row of teeth starting on pseudorostrum, running backwards and downwards and ending on the anterolateral horn *D. granulata* Zimmer, 1921.*
- 2'. Without such short row of teeth 3
3. Carapace surface coarse (with tubercles or granules); females carapace presenting 3 horizontal rows of teeth on each side (inferolateral one extending from posterior margin of carapace to anterolateral horn) *D. sexpectinata* n. sp.
- 3'. Carapace surface polished; females carapace with 2 horizontal rows of teeth on each side (inferolateral row absent) *D. argentata* Calman, 1912.*

* See also redescription by Moretti and Roccatagliata, 2007.

4. Uropod peduncle very long, nearly twice as long as telson. Female telson with 4-9 pairs of slender setae usually preceded by a few cuspidate setae. First pereopod remarkably long. Size up to 20 mm *D. hammoniae* Zimmer, 1902.
- 4'. Uropod peduncle 1.2-1.3 times as long as telson. Female telson with cuspidate setae only. First pereopod not particularly long. Size up to 14 mm 5
5. Telson distal cuspidate setae divergent. Carapace in dorsal view showing a pentagonal figure which base (side parallel to posterior margin of carapace) is longer than the lower sides, oblique ridges even and serrate anteriorly.
..... *D. fabrizioi* Alberico and Roccatagliata, 2008.
- 5'. Telson distal cuspidate setae parallel. Carapace, base of pentagonal figure shorter than lower sides, oblique ridges produced into a blunt projection and not serrate anteriorly.
..... *D. planifrons* Calman, 1912 (male unknown).**

DISCUSSION

Diastylis sexpectinata was found in large numbers in shallow, warm-temperate waters from São Paulo State (Brazil) to northern Patagonia (Argentina), thus, it extends throughout the Argentinian Biogeographic Province. On the other hand, *D. hammoniae* Zimmer, 1902 occurs in the Magellan Biogeographic Province, both in the Atlantic and Pacific oceans (see Fig. 1).

Diastylis hammoniae undergoes changes in its telsonic chaetotaxy as it becomes older (see Table 1). A substantial ontogenetic variation in the telsonic armature also occurs in the males of *Diastylis glabra* Zimmer, 1900 (see in Zimmer, 1926, figs. 85 and 86). It is worth noticing that not only the female of *D. hammoniae* but also those of *D. goodsiri* (Bell, 1855), *D. koreana* Calman, 1911, *D. hirsuta* Lomakina, 1955 and *D. omorii* Gamô, 1968 present slender setae on their telsons (see Sars, 1900; Calman, 1911; Lomakina, 1955; Gamô, 1968). At this point the question arises whether the immature instars of these four species have both cuspidate and slender setae, and the adult males have just cuspidate setae. Unfortunately, the adult males of *D. koreana*, *D. hirsuta* and *D. omorii* are unknown and that of *D. goodsiri* is superficially described. Furthermore, the earliest instars of none of these species have been described. These facts prevent us from knowing if the ontogenetic changes herein reported to *D. hammoniae* also take place in some of the above mentioned species.

The relative length of the uropod rami is also ontogenetically dependent in *D. hammoniae*. Rami are subequal in immature instars but the endopod became longer than the exopod in adult specimens (compare Figs. 10B-C).

Zimmer (1902) stated that the adult female of *D. hammoniae* have no rudimentary exopods on their third and fourth pereopods. Furthermore, Błażewicz-Paszkowycz and Heard (2005) examined the female paratype collected on 1 May 1888 and some additional females from sub-Antarctic waters, and also reported the lack of rudimentary exopods on the third and fourth pereopods. However, a re-examination of the holotype and the paratype revealed to us that both specimens have reduced exopods on the above mentioned pereopods.

Diastylis hammoniae is a large species, the adult reaching almost 20 mm in length. In addition, two other large diastylids are known from off Argentina: *Leptostylis manca* described by Sars (1873) based on a manca of 7.5 mm length,

** See also redescription by Alberico and Roccatagliata, 2008.

Table 1. *Diastylis hammoniae* Zimmer, 1902: telsonic setae sorted by types and instars. For each instar the total number of slender setae (N_s) and the total number of cuspidate setae (N_c) was calculated. The ratio $N_s/N_s + N_c$ in percentage is presented in the rightmost column. When one of the sides of a telson has broken or missing setae, only the undamaged side was computed. "Subadult ♀" stands for females with incipient oostegites, and "Subadult ♂" for males with developing pleopods. * It includes the specimen referred by Zimmer (1902) as "*Leptostylis manca* G. O. Sars?". ** It includes the holotype and the paratype of *D. hammoniae*.

	Range of slender setae on each side of the telson	Range of cuspidate setae on each side of the telson	Ratio
Juveniles ($N = 23$)*	0-3	1-4	43.7%
Subadult ♀ ($N = 13$)	2-8	1-4	62.5%
Adult ♀ ($N = 6$)**	4-9	0-3	79.3%
Subadult ♂ ($N = 3$)	2-4	2-4	46.9%
Adult ♂ ($N = 2$)	0	9-12	0.0%

and the tentatively named "*Leptostylis manca* G. O. Sars?" described by Zimmer (1902) based on an early juvenile of 8.5 mm (10.5 mm after Zimmer). Later on, Zimmer (1908) transferred *L. manca* to the genus *Diastylis*. Finally, Băcescu-Meşter (1967) considered that Zimmer's specimen belongs to a separate species and named it *Leptostylis (?) mancoides*. After carefully examining this specimen we concluded that the names *D. hammoniae* and *L. (?) mancoides* refer to the same species. Thus, the older name *D. hammoniae* takes priority; with *L. (?) mancoides* becoming a junior synonym.

Most probably *D. manca* (Sars, 1873) is also conspecific with *D. hammoniae*. However, since the description of *D. manca* is based on a manca instar and the holotype is lost, the taxonomic status of this species is uncertain. Therefore, *D. manca* should be treated as a "species inquirenda" until further specimens (including mancae) from off the Río de la Plata is available. In this regard, it is worth noticing that descriptions of diastylids (and cumaceans in general) based on immature specimens should be discouraged.

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REFERENCES

- Alberico, N. A., and D. Roccatagliata. 2008. *Diastylis fabrizioi*, a new species and brief redescription of *D. planifrons* Calman, 1912 (Crustacea: Cumacea: Diastylidae) from South America. *Journal of Natural History* 42: 1039-1063.

- Băcescu, M. 1992. Cumacea II (Fam. Nannastacidae, Diastylidae, Pseudocumatidae, Gynodiastylidae et Ceratocumatidae), pp. 175-468. In, H.-E. Gruner and L. B. Holthuis (eds.), *Crustaceorum Catalogus*. Pars 8. SPB Academic Publishing, The Hague.
- Băcescu-Meşter, L. 1967. Contribution to the knowledge of the genus *Leptostylis* Sars (Cumacea): three new species collected by the Vema Expedition. *Crustaceana* 13: 266-273.
- Bell, Th. 1855. Account of the Crustacea, pp. 403-404. In, *The last of the Arctic voyages; being a narrative of the expedition in H. M. S. "Assistance," under the command of Capt. E. Belcher*. Vol. 2. Lovell Reeve, London.
- Błażewicz-Paszkowycz, M., and R. W. Heard. 2001. Observations on Cumacea (Malacostraca: Peracarida) from Antarctic and subantarctic waters. I. *Ekleptostylis debroyeri* (Diastylidae), a new species from waters off the Antarctic Peninsula. *Proceedings of the Biological Society of Washington* 114: 907-917.
- , and ———. 2005. Observations on Cumacea (Malacostraca: Peracarida) from Antarctic and subantarctic waters. II. The rediscovery and redescription of *Diastylis hammoniae* Zimmer, 1902 and *Diastylis planifrons* Calman, 1912. *Proceedings of the Biological Society of Washington* 118: 649-659.
- Brandt, A., U. Mühlenhardt-Siegel, and A. Schmidt. 1999. Density, diversity, and community patterns of selected peracarid taxa (Crustacea, Malacostraca) in the Beagle Channel, South America, pp. 541-558. In, F. R. Schram and J. C. von Vaupel Klein (eds.), *Crustaceans in the Biodiversity Crisis*. Brill, Leiden.
- Calman, W. T. 1911. IV. On new or rare Crustacea of the order Cumacea from the collection of the Copenhagen Museum. Part II. The families Nannastacidae and Diastylidae. *Transactions of the Zoological Society of London* 18 (1): 341-398.
- . 1912. The Crustacea of the order Cumacea in the collection of the United States National Museum. *Proceedings of the United States National Museum* 41 (1876): 603-676.
- Day, J. 1980. Southern African Cumacea. Part 4. Families Gynodiastylidae and Diastylidae. *Annals of the South African Museum* 82 (6): 187-292.
- Gamô, S. 1968. Studies on the Cumacea (Crustacea, Malacostraca) of Japan. Part III. *Publications of the Seto Marine Biology Laboratory* 16 (3): 147-192.
- Google Earth. 2009. Available from <http://earth.google.com/>
- Lomakina, N. B. 1955. Cumacea of far eastern seas. *Trudy Zoologicheskogo Instituta Akademii Nauk* 18: 112-165.
- Moretti, A. N., and D. Roccatagliata. 2007. On two allied species of the genus *Diastylis* from southern South America: *D. granulata* Zimmer, 1921 and *D. argentata* Calman, 1912 (Crustacea: Cumacea: Diastylidae). *Journal of Natural History* 41: 2621-2639.
- Mühlenhardt-Siegel, U. 1999. On the biogeography of Cumacea (Crustacea, Malacostraca). A comparison between South America, the Subantarctic Islands and Antarctica: present state of the art. *Scientia Marina* 63 (Suppl. 1): 295-302.
- Sars, G. O. 1873. Beskrivelse af syv nye Cumaceer fra vestindien of det Syd-Atlantiske Ocean. *Kongliga Svenska Vetenskaps-Akademiens Handlingar, N.S.*, Series 4, 11 (5): 3-30.
- . 1900. An Account of the Crustacea of Norway. III. Cumacea. *Bergen Museum, Bergen*.
- Stebbing, T. R. R. 1913. Cumacea (Symptoda). *Das Tierreich* 39: 1-210.
- Zimmer, C. 1900. Die arktischen Cumaceen. *Fauna Arctica* 1: 409-444.
- . 1902. Cumaceen Ergebnisse der Hamburger Magalhaensischen Sammelreise 2: 3-18. *Friederichsen and Co., Hamburg*.
- . 1908. Die Cumaceen der "Deutschen Tiefsee-Expedition". *Wissenschaftliche Ergebnisse der Deutschen Tiefsee-Expedition, "Valdivia" 1898-1899*, 8 (3): 157-196.
- . 1913. Die Cumaceen der Deutschen Südpolar-Expedition 1901-1903. *Deutsche Südpolar-Expedition 1901-1903*, 14 (Zool), 6 (3): 437-491.
- . 1921. Einige neue und weniger bekannte Cumaceen des Schwedischen Reichsmuseums. *Arkiv för Zoologi* 13 (21): 1-9.
- . 1926. Northern and Arctic invertebrates in the collection of the Swedish State Museum (Riksmuseum). X. Cumaceen. *Kungliga Svenska Vetenskapsakademiens Handlingar, Series 3*, 3 (2): 1-88.

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