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Lophogaster muranoi, a new species of mysid from the coastal waters of Argentina (Crustacea: Mysidacea: Lophogastridae)

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Abstract.—*Lophogaster muranoi*, a new species, is described from the coastal waters of Argentina. This new species is characterized by the medium-sized median rostral spine extending slightly beyond the apex of the antennular lobe, the presence of a pair of the postorbital spines on the carapace, and the telson armed with 4 pairs of lateral spines and a narrow apical median plate. This is the third species of the genus *Lophogaster* from the South Atlantic Ocean.

The genus *Lophogaster* comprises 18 species and 1 subspecies to date, all from tropical to temperate waters of the world. Among them, only two species, *L. spinosus* Ortmann, 1906 and *L. challengeri* Fage, 1940, have been represented in the South Atlantic Ocean, the former was recorded from mid-Atlantic waters (Fage 1942) and off Rio de Janeiro (O. Tattersall 1955) and the latter from coastal waters of South Africa (G. Sars 1885, Fage 1942, O. Tattersall 1955) and Cape of Lopez, West Africa (O. Tattersall 1955).

An undescribed species of *Lophogaster* collected from coastal waters of San Matías Gulf and Río de la Plata estuary, Argentina, is the first species of the genus from Argentine waters. In this paper a description of the new species is given.

The type specimens are deposited in the National Science Museum, Tokyo (NSMT).

Lophogaster muranoi, new species
Figs. 1–4

Type series.—Holotype (NSMT-Cr 11994), adult male (19.2 mm, tip of the median spine of the rostrum to the posterior end of the telson except apical spines); allotype (NSMT-Cr 11995), adult female (18.8 mm); paratypes (NSMT-Cr 11996), 1 adult male (18.0 mm) and 1 adult female (16.0 mm); San Matías Gulf (42°09′S, 64°32′W); depth 170 m; 11 to 22 May 1991.

Other material.—1 adult male (16.0 mm), 1 adult female (16.0 mm), 1 immature male (13.4 mm) and 2 immature females (13.0 and 14.4 mm); same as type specimens. 1 adult male (15.8 mm), 2 adult females (13.4 and 16.0 mm), 1 immature male (13.0 mm) and 3 juveniles (7.8-9.6 mm); Río de la Plata estuary (35°32′S, 53°18′W); depth 52 m; 12 Oct 1995; collected with a Bongo net, 45–0 m oblique tow by the R/V *Oca Balda* of the INIDEP, Mar del Plata, Argentina.

Description.—Carapace covered with minute tubercles on anterior half of dorsal surface; rostrum covering eyestalks and proximal 2 segments of antennular peduncles, tridentate anteriorly, median process medium-sized extending slightly beyond apex of antennular lobe, lateral spines short; lateral margin of rostrum concave, minutely serrate (Fig. 1A, B); posterior margin of carapace deeply emarginate, leaving eighth or seventh and eighth thoracic somites exposed dorsally, furnished dorsally with fine

setae; postero-lateral angles of carapace terminating in comparatively long, slightly upward spine (Fig. 4C); pair of prominent postorbital spines present (Fig. 1A, B).

Antennular peduncle robust; first segment as long as broad; second segment short, with outer distal corner produced and tipped with 2 plumose setae; third segment slightly shorter than first and second segments combined, distal margin produced into 2 blunt processes with spinules frontally (Fig. 1A, B); antennular lobe from third segment with finely serrated and rounded anterior margin with slight median depression armed with 2 unequal setae (Fig. 1C).

Antennal scale cordiform, 1.8 times as long as widest part; outer margin slightly convex, armed with 5 denticles in holotype and 6 in allotype on distal 0.7, terminating in long, straight, acute spine; inner margin setose (Fig. 1B, D). Antennal peduncle composed of 3 segments; first segment with acutely pointed small process at inner distal corner, third segment longer than proximal 2 segments combined, inner distal corner ending in long, outwardly curved spine (Fig. 1D).

Labrum triangular, produced anteriorly into acute spinose process. Mandibular palp long and slender, second segment longest, 6 times as long as broad, third segment 0.7 of second segment in length, armed densely with short setae on distal 0.8 (Fig. 1E). Maxillule with outer lobe armed with 13 strong spines on terminal margin and 1 long seta on basal part, inner lobe rounded with 7 long and 8 short setae (Fig. 1F). Maxilla with exopod oval, armed with many plumose setae on whole margin, second segment of endopod twice as long as broad at its base (Fig. 1G).

Each sternum of second to seventh thoracic somites with 2 acutely pointed spine-like processes on midline; anterior one short, posterior one long and forward-directed.

First thoracic limb short and robust; exopod short, leaf-like, 2-segmented, without setae, endopod with expanded merus and carpopropodus armed with 3 stout setae each on inner margin in addition to slender setae, dactylus with stout claw; epipod large (Fig. 2A). Second thoracic limb slender; exopod short, about half length of endopod; endopod setose on inner margin, dactylus with small curved claw (Fig. 2B). Third and fourth thoracic limbs long and slender, exopod similar to that of second limb (Fig. 2C, E); endopod of third limb with dactylus armed with 3 hooked spines on distal half and 3 ordinary spines on proximal half of inner margin (Fig. 2D); endopod of fourth limb with merus armed densely with short and slender spines on distal half of inner margin (Fig. 2F), dactylus without spines as seen in third limb. Fifth thoracic limb robust, exopod 14-segmented; endopod with merus longest, 1.2 times longer than carpopropodus and dactylus combined (Fig. 2G). Sixth to eight thoracic limbs stout, exopod 9-16-segmented; endopod with merus short, 0.6 as long as carpopropodus (Fig. 3A–C).

Marsupium of female composed of 7 pairs of brood lamellae.

Each abdominal somite with well-developed pleural plate; first to fifth somites with short, acutely pointed, median process; sixth somite armed posteriorly with pair of sharp denticles about half length of apical spines of telson (Fig. 4A).

Pleopods in both sexes well-developed and biramous; exopods 23–26 segments, longer than 13–19 segments of the endopods (Fig. 3D–H).

Uropods shorter than telson; exopod undivided, outer margin naked, terminating in tooth, inner margin setose; endopod slightly longer than exopod, both inner and outer margins setose (Fig. 4A).

Telson 2.2 times longer than last abdominal somite, about 3 times as long as broad at its base; lateral margin armed with 4 spines; subapical one long, half the length of apical spines and located away from proximal 3 arranged at regular intervals; apical margin narrow, with pair of strong spines at corners, median plate, 4 spinules, narrow, and pair of plumose setae present

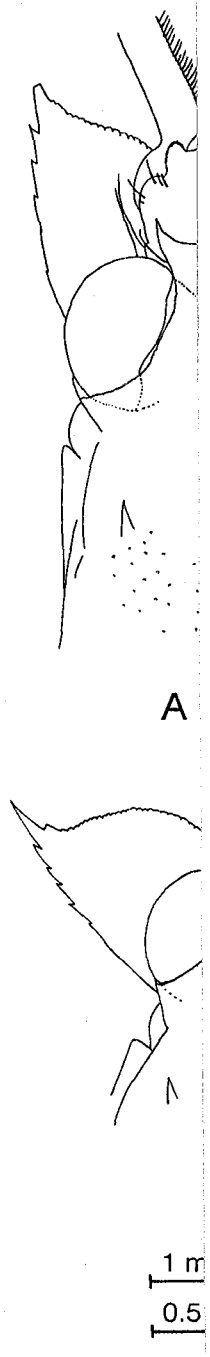

Fig. 1. *Lophogast* dorsal view; B, anteri G, maxilla.

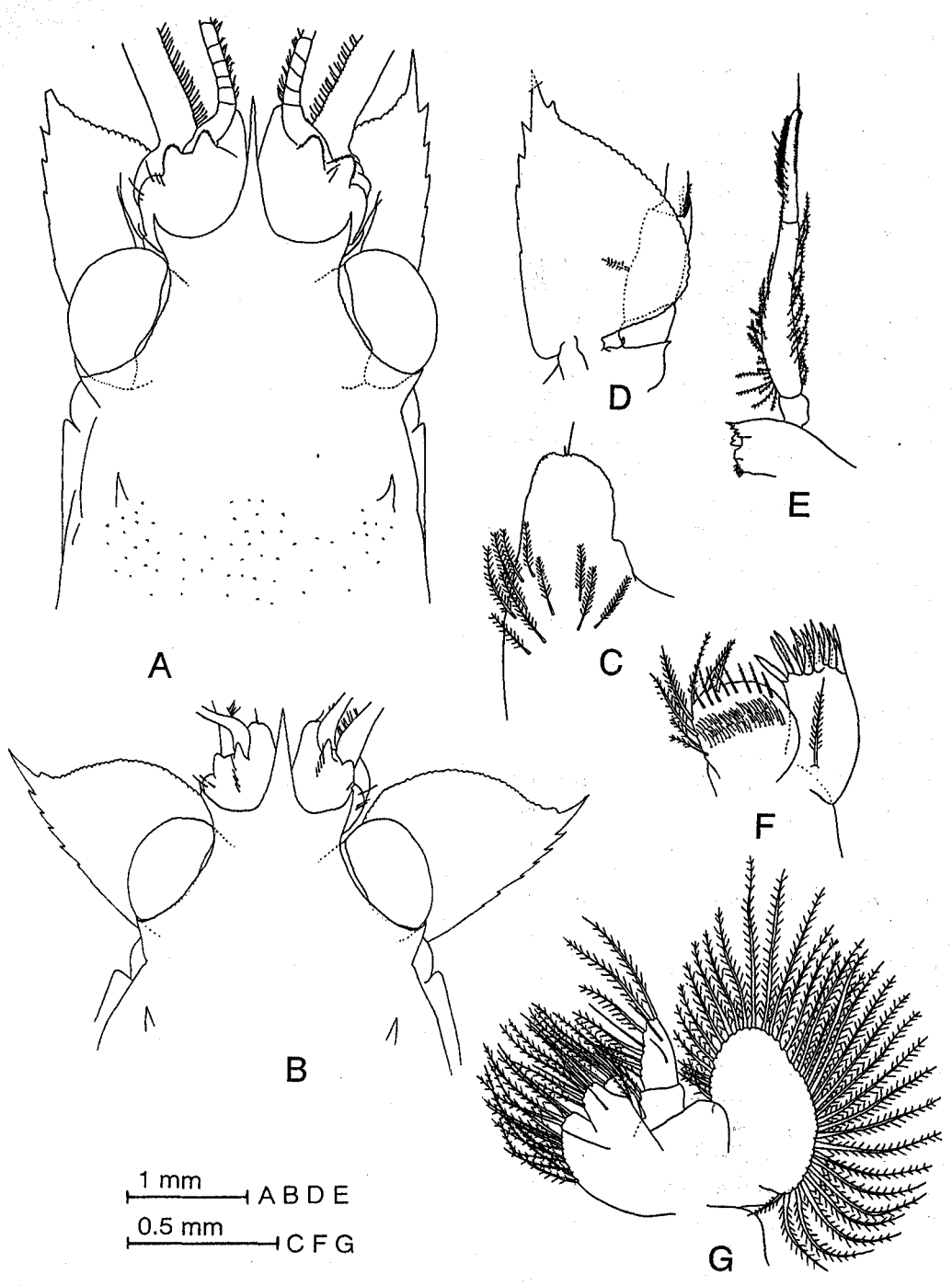

Fig. 1. *Lophogaster muranoi*, new species. A, C–G: holotype (male); B: allotype (female). A, Anterior end, dorsal view; B, anterior end, dorsal view; C, antennular lobe, ventral view; D, antenna; E, mandible; F, maxillule; G, maxilla.

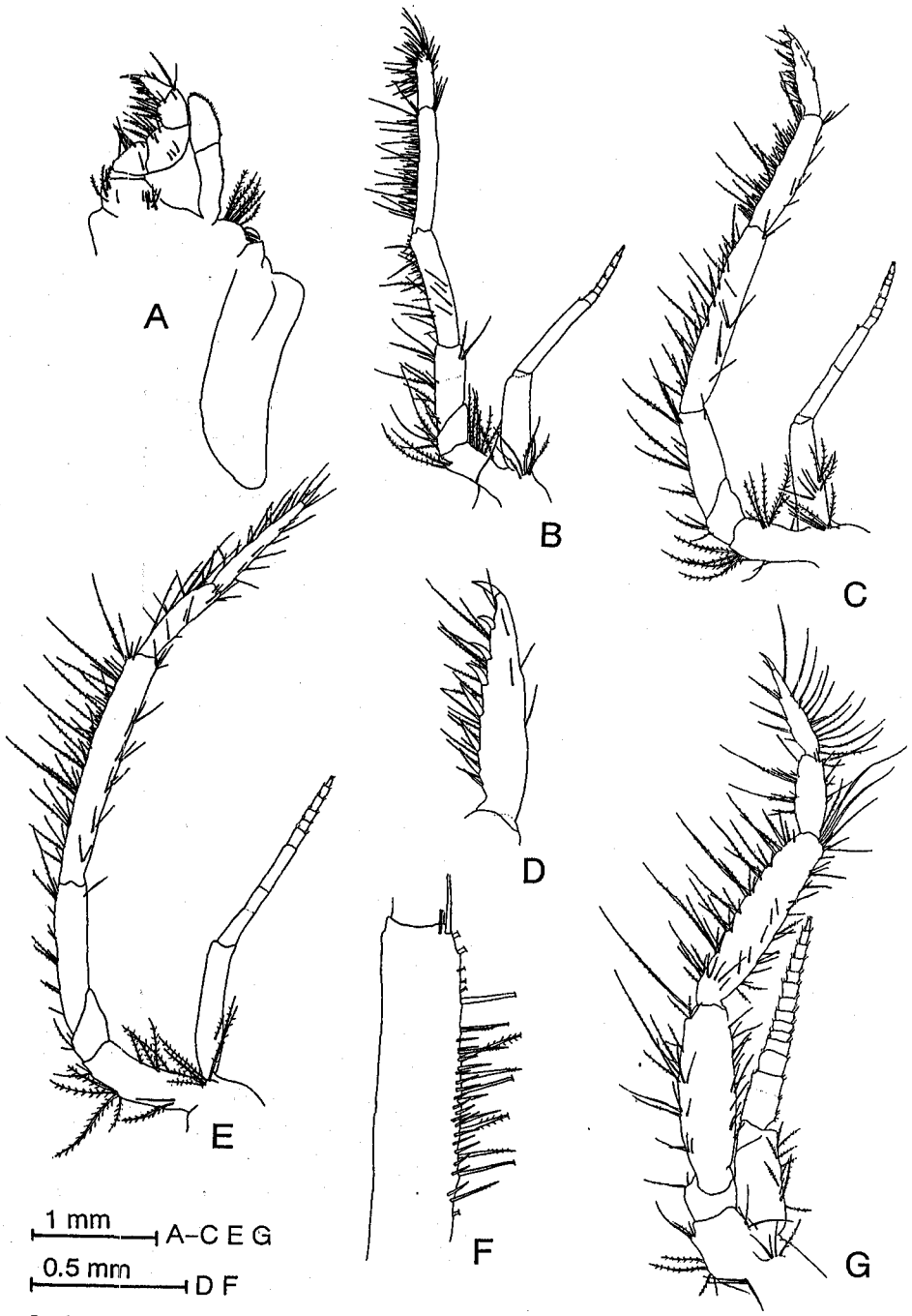

Fig. 2. *Lophogaster muranoi*, new species. Holotype (male). A, First thoracic limb; B, second thoracic limb; C, third thoracic limb; D, dactylus of third thoracic limb; E, fourth thoracic limb; F, merus of fourth thoracic limb; G, fifth thoracic limb.

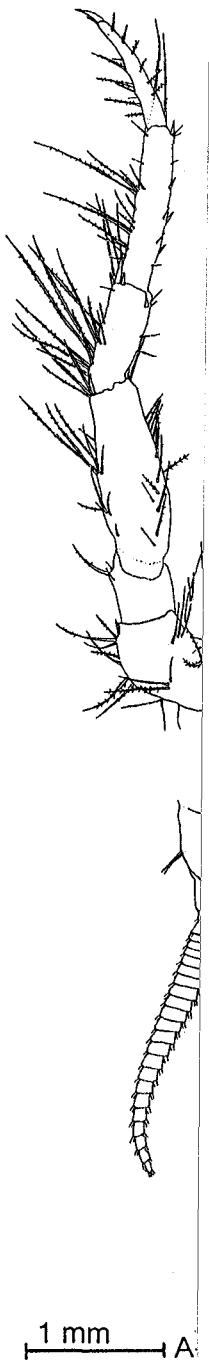

Fig. 3. *Lophogaster m*
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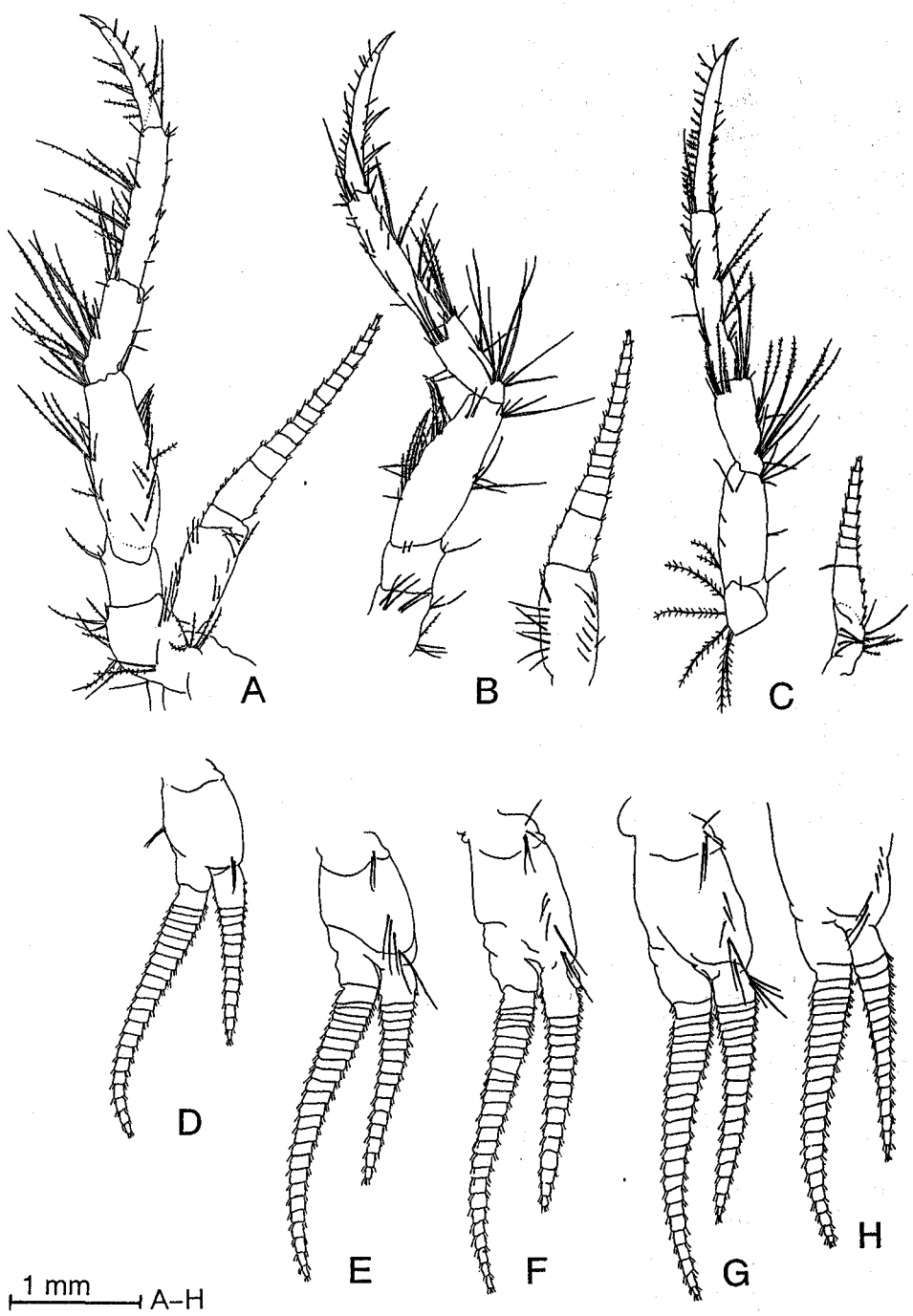

Fig. 3. *Lophogaster muranoi*, new species. Holotype (male). A–C, Sixth to eigth thoracic limbs; D–H, first to fifth pleopods.

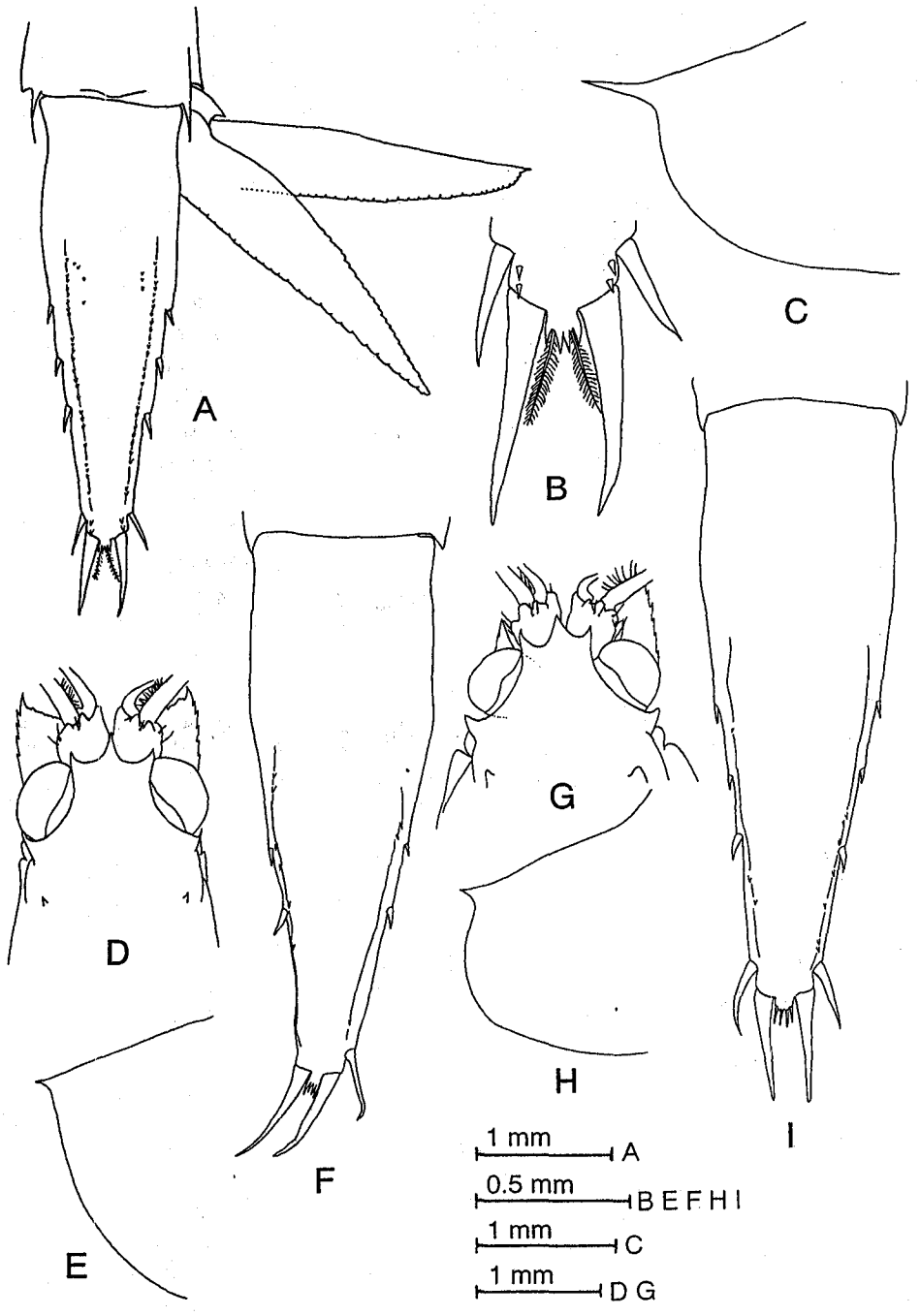

Fig. 4. *Lophogaster muranoi*, new species. A–C: holotype (male); D–F: young specimen (7.8 mm); G-I: young specimen (8.0 mm). A, Telson and uropod; B, apical part of telson; C, right postero-lateral part of carapace; D, anterior end, dorsal view; E, postero-lateral part of carapace; F, telson; G, anterior end, dorsal view; H, right postero-lateral part of carapace; I, telson.

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between outer 2 indentations of median plate; 2 spinose dorsal keels present on posterior 0.8 of telson (Fig. 4A, B).

Morphological change with growth.—In many species of the genus *Lophogaster*, geographical variation, sexual dimorphism and morphological change with growth have been observed in several characters (Hansen 1910, Fage 1942, O. Tattersall 1960, Casanova 1993, 1996). In this new species morphological change with growth was observed in the lengths of the median rostral spine and the postero-lateral spine of the carapace, and in the number of lateral spines of the telson (Fig. 4D–I). The median rostral spine of young specimens is much shorter as compared to adults and extends only to the middle of the third segment of the antennular peduncle. The postero-lateral spine of the carapace is also shorter in young specimens than in adults. Three lateral telson spines are present in the smallest specimen (7.8 mm body length) compared to 4 in larger specimens. The microscopic tubercles on the carapace become noticeable in older specimens. The antennular lobe, the postorbital spines on the carapace, and the apical plate of the telson do not change with growth or gender.

Etymology.—Named in honor of Dr. Masaaki Murano.

Remarks.—*Lophogaster muranoi*, new species, is related to *Lophogaster typicus* in respect to the rounded antennular lobe, the presence of a pair of the postorbital spines, and the armature of the telson, but differs from the latter species in the following ways. The median rostral spine extends beyond the apex of the antennular lobe in *L. muranoi*, while it ends in the middle of the distal segment of the antennular peduncle in *L. typicus*, the spine at postero-lateral angle of the carapace is much longer in *L. muranoi* than in *L. typicus*, and in *L. muranoi* the apical margin of the telson between the pair of the long apical spines forms a narrow projecting plate while the apical margin does not protrude to a plate in *L. typicus*.

Tattersall & Tattersall (1951) observed that for *L. typicus* the coarse serrations on the antero-lateral margin of the rostrum, which is seen in younger specimens, is gradually lost as growth proceeds and completely disappears at a length of 13 mm. In *L. muranoi* the minute serrations on the lateral margin of the rostrum are retained continuously from the younger stage (7.8 mm) to the adult (19.2 mm).

Lophogaster muranoi is easily distinguishable from the two known species from the South Atlantic Ocean, *L. challengeri* and *L. spinosus*, by the presence of the postorbital spines on the carapace.

Acknowledgments

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