Lysmata debelius new species, a new hippolytid shrimp from the Philippines

by A.J. BRUCE *

Fig. 1. - *Lysmata debelius* new species, aquarium specimens Ikan
Lysmata debelius n. sp., spécimens d'aquarium.

ABSTRACT

A new species of hippolytid shrimp, *Lymata debelius,* from Polillo Island, Philippines, is described and illustrated. The species is remarkable for its brilliant colouration and can be immediately separated from all congeneric species by the second pereiopod, which has a biarticulate ischium and merus.

INTRODUCTION

Recently examples of a brilliantly coloured hippolytid shrimp have been imported to Europe through Far East Asian aquarium specimen suppliers. Although apparently well known in marine aquarist circles, where it is known as cardinal shrimp or Kardinals - garnele, these shrimps appear to be distinct from all previously described species. I am most grateful to Mr **Helmut Debelius**, of Frankfurt, after whom this shrimp is named, for bringing it to my attention and providing the holotype specimen and colour photographs of live specimens, and for the biological information concerning the species.

Abbreviations: NTM = Northern Territory Museum, Darwin, Australia; SMF = Senckenberg Museum, Frankfurt am Main, W-Germany.

Lysmata debelius new species

Figures 1-5

Holotype: NTM Cr.000308, 1 ♂, post-orbital carapace length 6-5 mm, Polillo Island, E. of Luzon, Philippines, 28 m, 25 August 1981, coll. **H. Debelius.**

Paratype: SMF 10773, 1 , post-orbital carapace length mm, Philippines, Zoo-Hofmann vend. 1982.

Description

A small sized hippolytid of normal form, slightly compressed, with body generally smooth and glabrous.

Rostrum straight, slender, extending to just beyond intermediate segment of antennular peduncle, dorsal carina extending from slightly in front of middle of carapace length, with five acute teeth, first on anterior fifth of carapace, second over posterior orbital margin and three on rostral process; ventral margin armed with two small teeth on distal fourth; lateral carinae feebly developed, posteriorly confluent with orbital margin; antennal spine large, acute, overlying a small blunt inferior orbital angle; anterolateral margin of carapace obtusely angular, unarmed.

Abdominal tergites smooth, third segment not produced; pleura of first three segments broadly round, fourth and fifth acutely produced posteriorly; fourth segment about 1.3 times length of fifth, about 1.1 times longer than deep, with posteroventral and posterolateral angles acute. Telson about 1.8 times length of sixth segment, 3.3 times longer than wide, sides mostly straight, convergent, posterior width about 0.33 of anterior, posterior margin angular with small median point; two pairs of small dorsal spines at 0.48 and 0.7 of telson length, posterior margin with pair of small lateral spines, similar to dorsal spines, large intermediate spines, about 2.8 times length of lateral spines, two long slender submedian setae; lateral margins of telson strongly setose.

Eye short and stout, with large globular deeply pigmented cornea.

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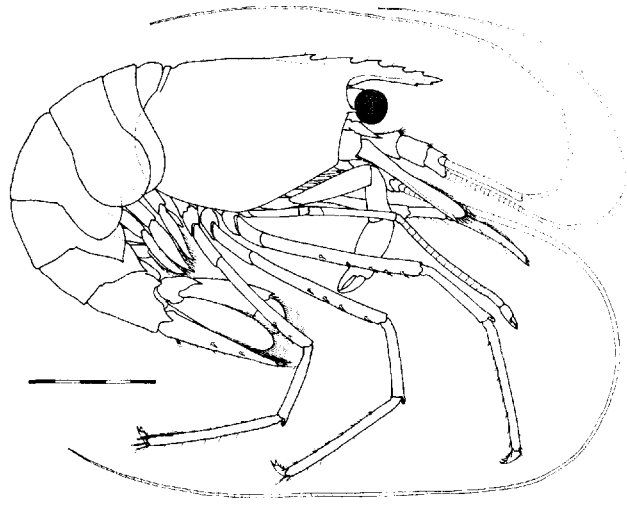

Fig. 2. - *Lysmata debelius* new species, holotype male. Scale in millemetres.
Lysmata debelius n. sp., mâle holotype. Echelle en millimètres.

Antennular peduncle robust; proximal segment about 1.5 times longer than wide, with acute stylocerite reaching to about 6.6 of length, statocyst obsolete; intermediate and distal segments together equal 0.85 of proximal segment, distal segment slightly smaller than proximal; each segment with a few small distolateral spinules; flagella subequal, long and slender; upper flagellum uniramous, with 12 proximal segments thickened, with about 24 groups of aesthetascs, accessory flagellum represented by single small protrusion.

Antenna with basicerite bearing strong ventrolateral spine; carpocerite about 3.0 times longer than wide, reaching to 0.3 of scaphocerite length, flagellum long and slender; scaphocerite extending far beyond antennular peduncle, 4.0 times longer than wide, lateral border feebly concave, with small acute distal tooth, slightly exceeding truncate distal border of lamella.

Mandible with corpus and molar process robust, incisor process and palp lacking. Maxillule with slender, slightly bilobed palp; upper lacinia broad, with densely spinulose medioventral border; lower lacinia slender with a few long slender setae. Maxilla with slender simple non-setose palp extending beyond distal border of basal endite, basal endite strongly bilobed, distal lobe broader and much larger than small slender lower lobe, both densely setose; coxal endite reduced, angular, sparsely setose; scaphognathite well developed, about 3.3 times longer than wide, anterior lobe distally narrowed, medial margin sinuous. First maxilliped with slender, three segmented palp, sparsely setose distally and medially, extending beyond basal endite; basal endite simple, elongated, narrow, with long slender setae along straight medial border; coxal endite broader, shorter, with convex distally setose medial border; exopod with well developed flagellum with long narrow caridean lobe; epipod large, bilobed. Second maxilliped with endopod normal, dactylar segment small and narrow, densely spinulose medially, propod elongated with numerous long slender spines distomedially; endopod well developed; epipod rounded, with small podobranch. Third maxilliped slender, endopod extending beyond scaphocerite by length of distal segment, ischio-merus and basis fused, combined segment slender, tapering distally, about 8.0 times longer than width near base; penultimate segment about 0.3 of length of antepenultimate, about 4.5 times longer than wide, with 5 groups of short serrate spines medially; distal segment twice length of penultimate, generally tapering but slightly swollen at one third of length, with about 14 groups of medial spines; obliquely truncated distally with about 11 short medial spines; exopod similar to that of second maxilliped; coxa robust, with a small rounded epipod bearing a sickle shaped process; small multilamellar arthrobranch present.

First four pereiopods with well developed epipods and setobranchiae. First pereiopod robust, extending slightly beyond scaphocerite; chela robust, with fingers short and stout, slightly less than half palm length, acute, feebly subspatulate with medially situated cutting edges, gaping proximally, and acute tips; palm subcylindrical, slightly compressed and proximally swollen, about 2.3 times longer than deep; carpus short and stout, half length of chela, distally expanded, unarmed; merus slightly shorter than chela, about 4.0 times longer than wide, unarmed; ischium, basis and coxa stout, short and unarmed. Second pereiopods subequal, long and slender, extending beyond scaphocerite by about one fifth of carpus; chela small, fingers slender, acute, equal to 0.8 of palm length, feebly subspatulate; palm about 1.5 times longer than deep; carpus slender, slightly longer than scaphocerite, with 16 articles, of which first and last are twice as long as others; merus slender, about 0.6 of carpus length, more robust, about 9.0 times longer than wide, biarticulate, with distal segment about 6.0 times longer than proximal, articulation rather oblique; ischium similarly robust, equal to 0.7 of merus, biarticulate, with articulation transverse, distal article equal to 0.33 of proximal, proximal article 4.4 times longer than wide, uniform, with 10 short curved serrulate setae along ventral border; basis normal, with five short spiniform setae distoventrally, without exopod; coxa normal. Third pereiopod slender, extending beyond scaphocerite by one third of carpus; dactyl short and robust, compressed, about 3.0 times longer than deep; unguis slender, about 4.0 times longer than wide; corpus with stout distal accessory spine, two slender ventral spines, and two groups of lateral sensory setae; propod slender, 13 times longer than wide, uniform, with long slender distoventral spine and 9 smaller spines distributed along ventral margin; carpus about 0.3 of propod length, slender, unarmed; merus about 1.25 times propod, about 13 times longer than central width, with 5 robust spines along distal two thirds of ventrolateral border; ischium about 0.2 of merus; basis and coxa normal. Fourth and fifth pereiopods similar; propods with 7 and 5 ventral spines respectively, fifth propod with four transverse groups of cleaning setae distally; meri decreasing in length posteriorly, fourth with four ventrolateral spines, fifth with two; coxa of fifth without epipod.

Endopod of first pleopod long and slender, tapering, about 6.5 times longer than wide, 0.6 of length of exopod, with short setae on medial and lateral margins. Appendix masculina of second pleopod 0.6 of length of appendix interna, corpus slender, 5.0 timer longer than wide, with three similar distal spines subequal to length of corpus Protopodite of uropod with posterolateral angle acutely produced; exopod slightly exceeded by tip of telson; exopod 2.2 times longer than wide, lateral border very feebly convex, a short tooth posteriorly with a robust mobile spine medially and a small acute tooth; endopod shorter than exopod, 2.75 times longer than wide.

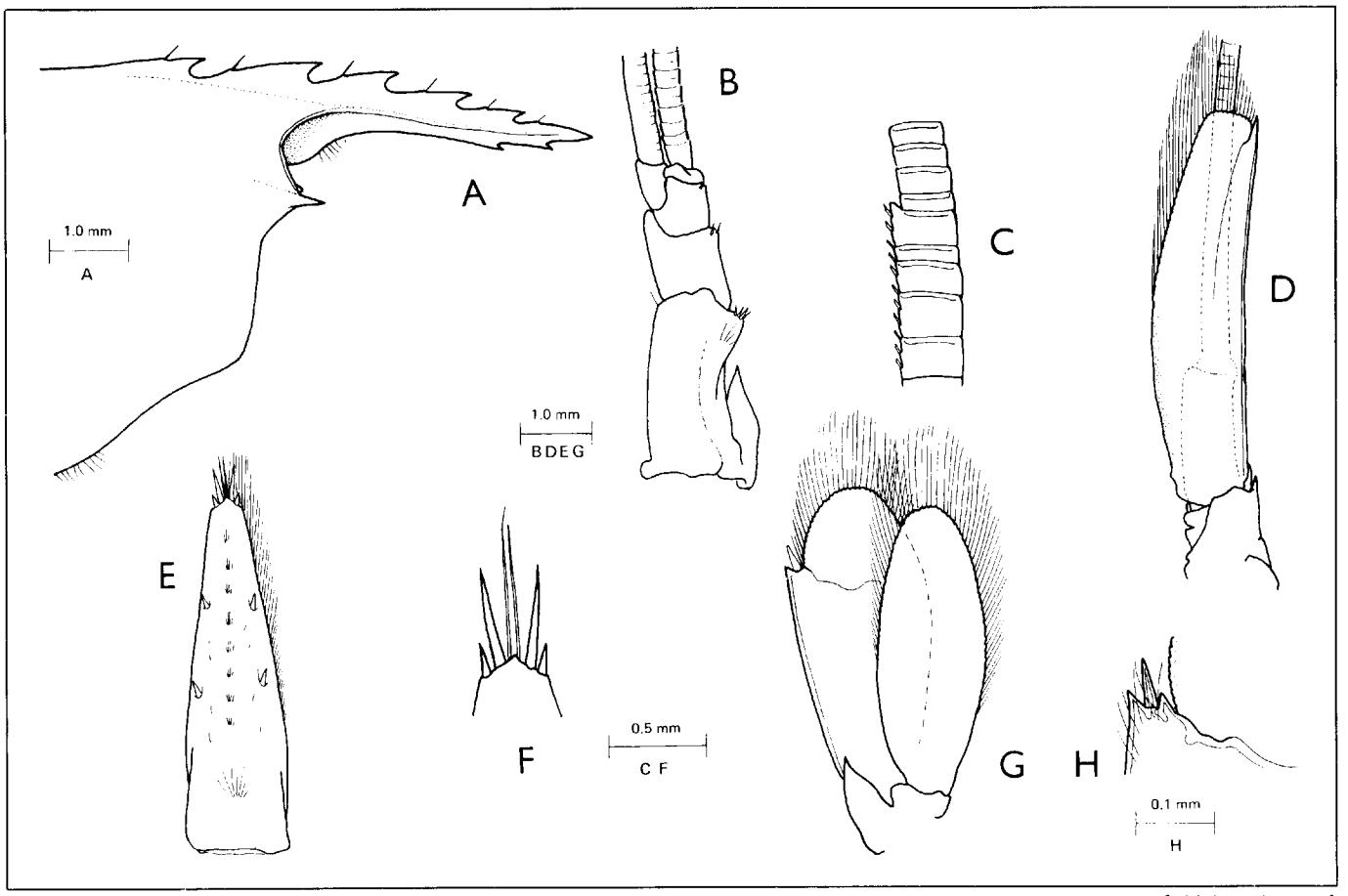

Fig. 3. - *Lysmata debelius* new species, holotype male, A, anterior carapace and rostrum. B, antennula. C, same, distal end of thickened part of upper flagellum. D, antenna. E, telson. F, same, posterior spines. G, uropod. H, same, exopod, posterolateral angle.

Lysmata debelius n. sp., mâle holotype. A, portion antérieure de la carapace et rostre. B, antennule. C, la même, extrémité distale de la portion épaissie du flagelle supérieur. D, antenne. E, telson. F, le même, épines postérieures. G, uropode. H. le même, angle latéro-postérieur de l'exopodite.

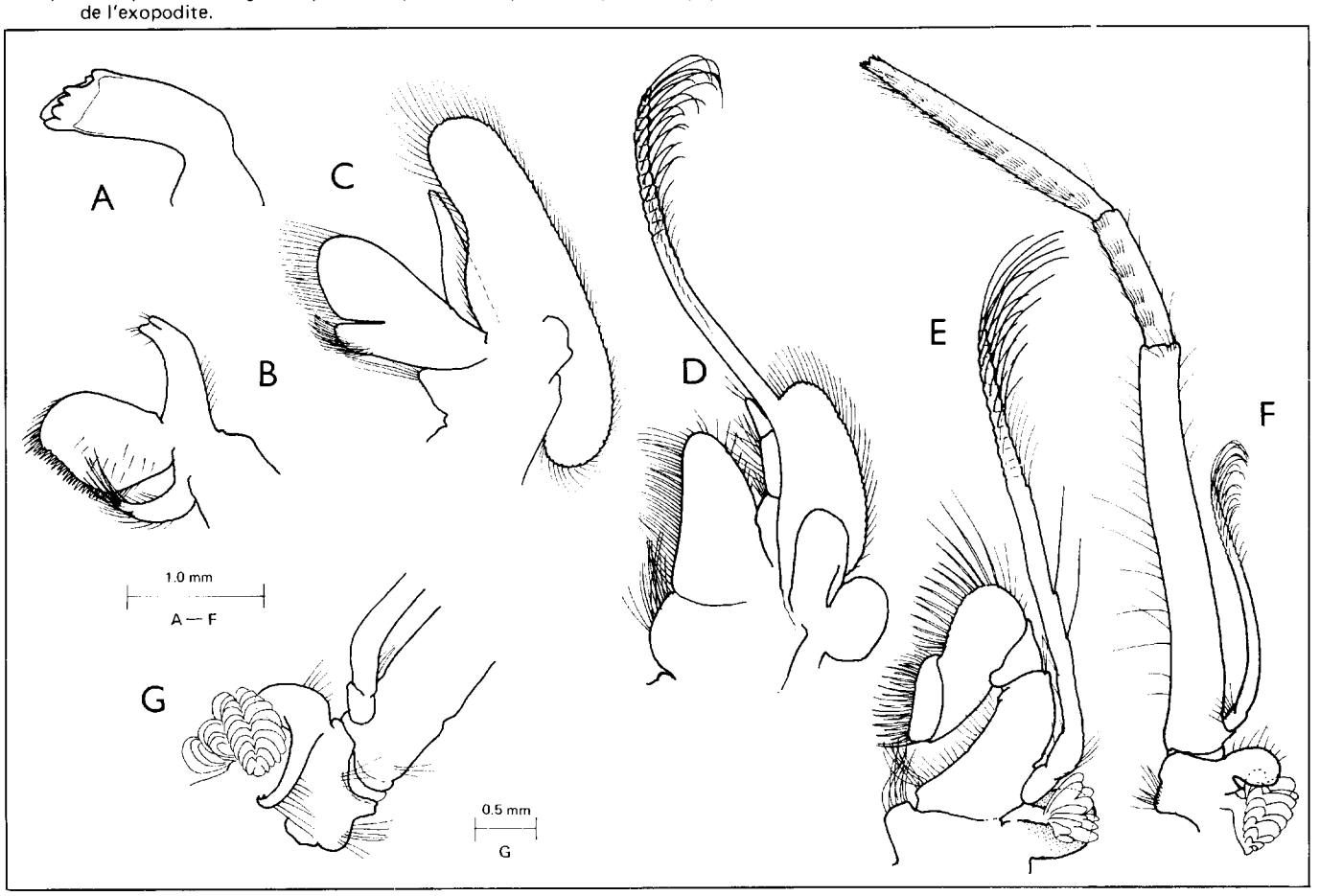

Fig. 4. - *Lysmata debelius* new species, holotype male. A, mandible, molar process. B, maxillula. C, maxilla. D, first maxilliped. E, second maxilliped. F, third maxilliped. G, same, coxa and basis, lateral aspect.

Lysmata debelius n. sp., mâle holotype. A, mandibule, processus molaire. B, maxillule. C, maxille. D, premier maxillipède. E, second maxillipède. F, troisième maxillipède. G, le même, coxa et basis, vue latérale.

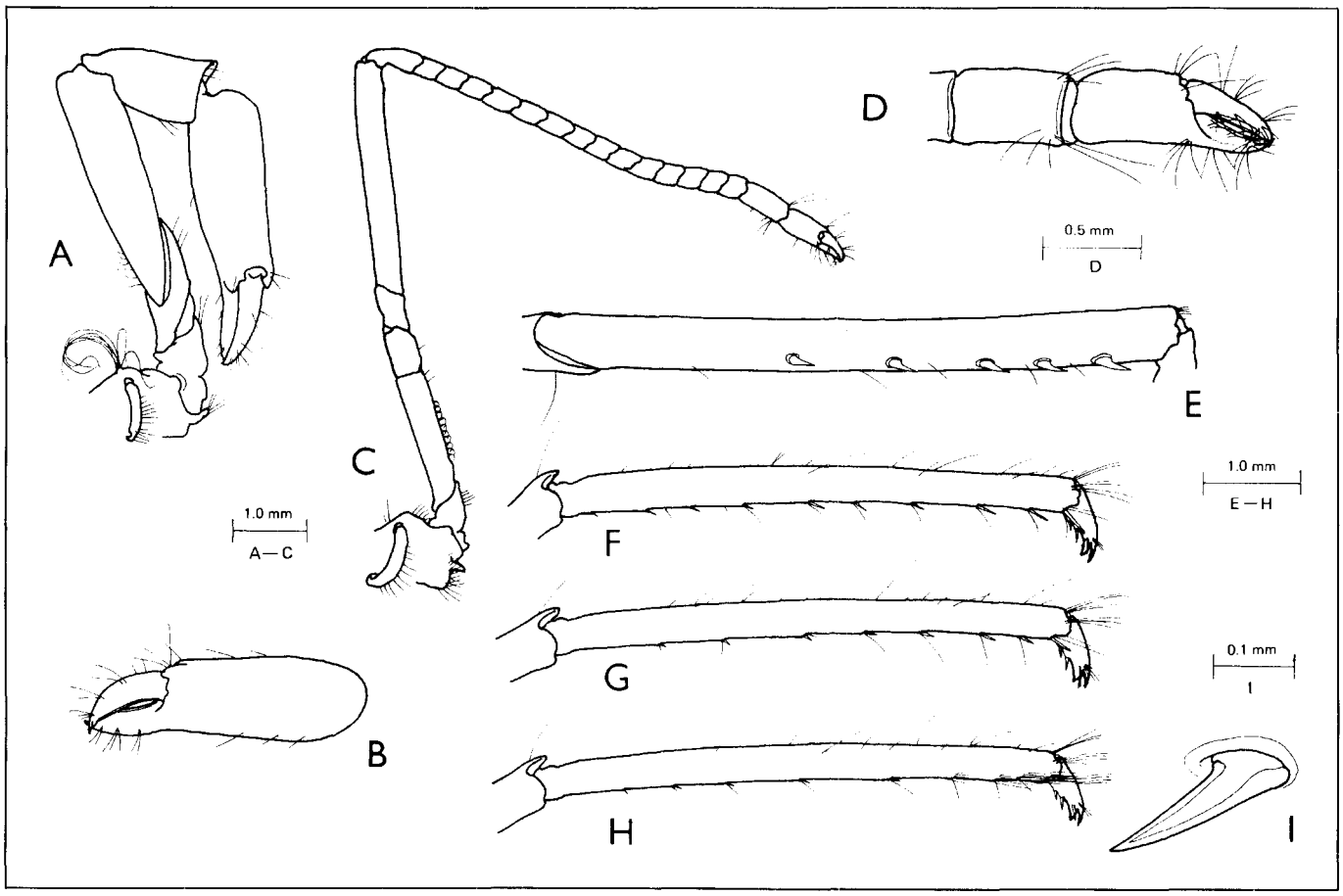

Fig. 5. - *Lysmata debelius* new species, holotype male. A, first pereiopod. B, same, chela. C, second pereiopod. D, same, chela and distal carpus. E, third pereiopod, merus. F, same, propod and dactyl. G, fourth pereiopod, propod and dactyl. H, fifth pereiopod, propod and dactyl. I, meral spine from third pereiopod.
Lysmata debelius n. sp., mâle holotype. A, premier péréiopode. B, le même, pince. C, second péréiopode. D, le même, pince. C, second péréiopode. D, le même, pince et portion distale du carpe. E, troisième péréiopode, merus. F, le même, propode et dactyle. G, quatrième péréiopode, propode et dactyle. H, cinquième péréiopode, propode et dactyle. H, cinquième péréiopode, propode et dactyle. I, épine mérale du troisième péréiopode.

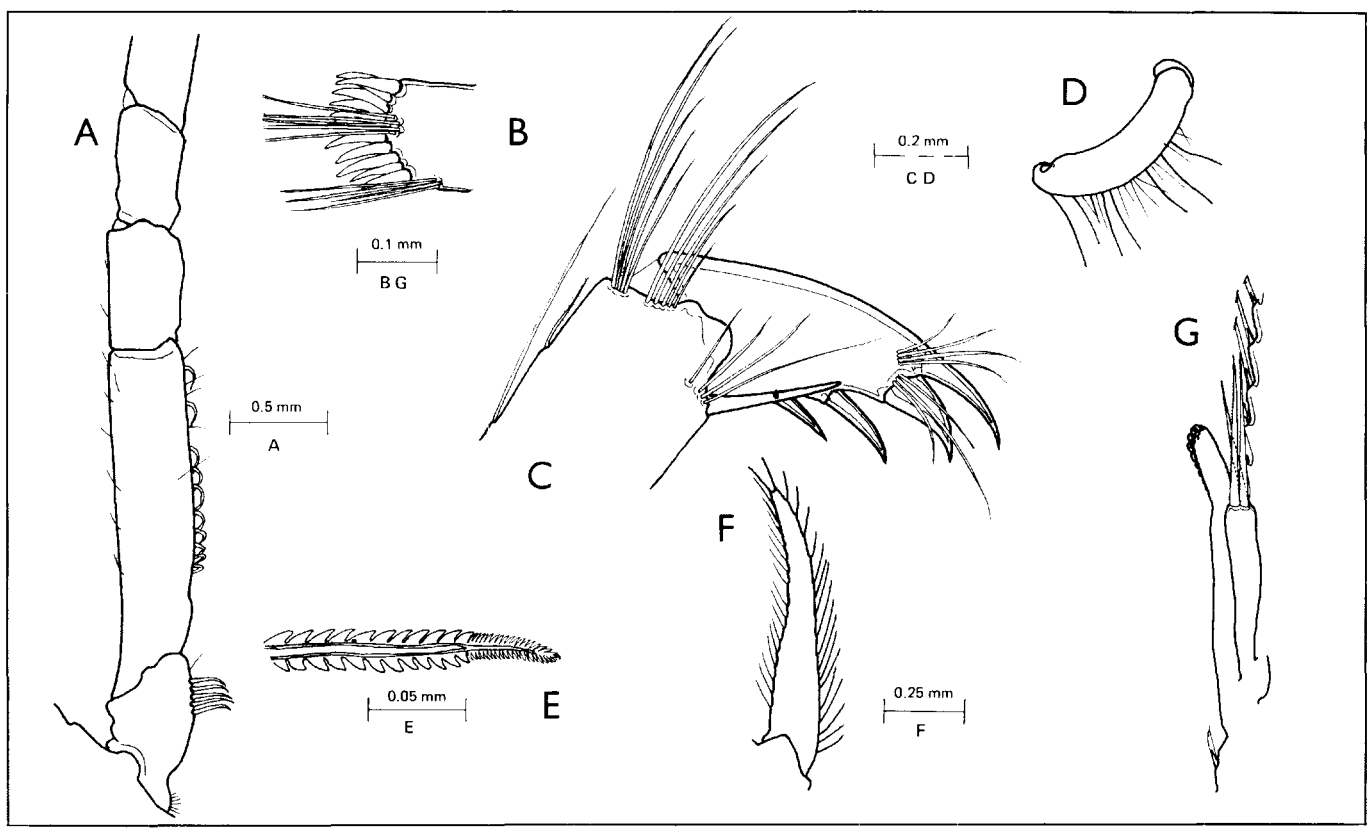

Fig. 6. - *Lysmata debelius* new species, holotype male. A, second pereiopod, ischio-meral joint. B, third maxilliped, terminal spines. C, dactyl of third pereiopod. D, epipod of fourth pereiopod. E, cleaning seta from distal propod of fifth pereiopod. F, endopod of first pleopod. G, appendices interna and masculina of second pleopod.
Lysmata debelius n. sp., mâle holotype. A, second péréiopode, articulation ischio-mérale. B, troisième maxillipède, épines terminales. C. dactyle du troisième péréiopode. D, epipodite du suatrième péréiopode. E, soie nettoyeuse de la région distale du propode du cinquième péréiopode. F, endopodite du premier pléopode. G, appendices interne et masculin du second pléopode.