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# A new species of the shrimp genus *Lysmata* Risso, 1816 (Crustacea, Decapoda) from Guam

Arthur Anker[1], Derek Cox

*Dickinson Hall, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611, USA*

**Abstract—**A new species of hippolytid shrimp, *Lysmata guamensis* n. sp., is described based on a single specimen collected in the shallow waters of Guam, the largest island of the Mariana Archipelago in the tropical western Pacific Ocean. The new species differs from all the other species of *Lysmata* by the presence of only two teeth on the mid-dorsal line of the carapace, one of which is posterior to the orbital margin. It also has unusually slender, elongate walking legs. An annotated table of all presently known species of *Lysmata* is provided.

## Introduction

The shrimp genus *Lysmata* Risso, 1816 is traditionally placed in the family Hippolytidae Bate, 1888, which, however, is polyphyletic and needs a complete revision (see Bracken et al. 2009). *Lysmata*, which includes familiar peppermint and cleaner shrimps, is represented in the Indo-West Pacific region by 15 species, reaching from the Red Sea to South Africa and across the Indian and Pacific Oceans to Japan, Hawaii and New Zealand (Chace 1997, Burukovsky 2000, Hayashi 2007). However, this is less than 40% of the total number of species currently known in the genus (36, De Grave et al. 2009; 5 additional taxa described in Hayashi 2007, Anker et al. 2009, Baeza et al. 2009a, Laubenheimer & Rhyne 2010, Okuno & Fiedler 2010) and possibly quite far from the actual diversity in this vast oceanic province, as suggested by the rather confusing synonomy of several taxa (see Chace 1997, Wicksten 2000a) and photographs of unidentified species in popular underwater field guides (e.g., Debelius 2001, Kuiter & Debelius 2009). Most recent taxonomic studies in *Lysmata* have focused on American species, resulting in a significant increase of their number in both the eastern Pacific and western Atlantic (e.g., Wicksten 2000a, 2000b, Rhyne & Lin 2006, Rhyne & Anker 2007, Baeza & Anker 2008, Anker et al. 2009, Baeza et al. 2009a). On the other hand, many Indo-West Pacific species remain poorly known or taxonomically problematic, and only four species have been described from this region in the last two decades (Chace 1997, Burukovsky 2000, Hayashi 2007, Okuno & Fiedler 2010; see also Table 1).

[1]Corresponding author. Present address: Laboratório de Ciências do Mar (Labomar), Universidade Federal do Ceará, Fortaleza, CE, 60165-081, Brasil. Email: arthuranker7@yahoo.com

Traditionally, species of *Lysmata* were assigned to two informal species groups based on the development of the accessory branch of the lateral antennular flagellum (Table 1) (e.g., Chace 1997, Hayashi 2007). Species of the "long branch" (LB) group have a well-developed, elongate, multi-segmented accessory branch. In contrast, species of the "short branch" (SB) group are characterised by a short accessory branch, with no more than two, sometimes barely distinguishable segments. In some species of the SB group, the accessory branch is reduced to a small stump, whereas in others, it is slightly curved and pointed distally, appearing as a short hook or unguis (unguiform). The monophyly of these two groups remains to be shown. Many species of the SB group were originally described under the generic name *Hippolysmata* Stimpson, 1860. However, some variation in the development of the accessory branch led Kemp (1914) to doubt the validity of *Hippolysmata* and Chace (1972) to place it in the synonymy of *Lysmata*. In a recent phylogenetic analysis of *Lysmata* based on molecular data (16S mt rRNA), Baeza et al. (2009b) did not comment on *Hippolysmata*, probably because their data did not support a single *Hippolysmata* clade. However, in their study, the Indo-West Pacific taxa were not adequately represented, with only two species out of 21 ingroup taxa. Therefore, it seems more appropriate to leave all species under the generic name *Lysmata*, awaiting more exhaustive molecular and morphological analyses and also more larval data.

In the present study, a new species of *Lysmata* from the SB group is described based on a single ovigerous specimen collected by the late Harry T. Conley in Guam, the largest island of the Mariana Archipelago in the tropical western Pacific, in 2001. Unfortunately, the collector did not record the shrimp's live colour pattern, which appears to be diagnostic for most species of *Lysmata* (e.g., Burukovsky 2000, Rhyne & Lin 2006, Rhyne & Anker 2008). However, this species appears to be truly unique within the genus in having only two dorsal teeth on the mid-line of the carapace, one on the carapace posterior to the level of the post-orbital margin (post-orbital dorsal tooth, PODT) and one on the rostrum (rostral dorsal tooth, RDT), in addition to several teeth on the ventral margin of the rostrum (rostral ventral teeth, RVT). It also possesses elongate, slender walking legs, longer and more slender than in most other species of the genus.

The holotype of the new species is deposited in the collections of the Florida Museum of Natural History, Gainesville, FL, U.S.A. (FLMNH). The carapace length (CL) and the post-orbital carapace length (PCL) were measured from the tip of the rostrum and post-orbital margin, respectively, to the posterior margin of the carapace; the total length (TL) is from the tip of the rostrum to the posterior margin of the telson. The carapace teeth formula is given as PODT + RDT / RVT. Other abbreviations used in the text: P1, P2, P3 – first, second and third pereiopods, respectively.

Table 1. List of species of *Lysmata Risso,* 1816 described to the present date (known undescribed species not included) grouped by major oceanic provinces: Eastern Atlantic (including Ascension Island); Western Atlantic; Eastern Pacific; Indo-West Pacific.
Abbreviations: Species groups: LB = long branch group; SB = short branch group. Type locality: HT = holotype locality (if designated as such and where several localities listed in the type material).

| **Species** Valid species in **bold** | **Taxonomic status** | **Species group** | **Type Locality** | **Distribution Range** * nominal species currently regarded as synonyms | **Main References** |
|---|---|---|---|---|---|
| **I. Eastern Atlantic/ European species** | | | | | |
| *Lysmata aberrans* Czerniavsky, 1884 | Synonym of *L. seticaudata* | See *L. seticaudata* | Sukhumi, Abkhasia | Black Sea* | Czerniavsky 1884 |
| ***Lysmata grabhami*** (Gordon, 1935) | Valid (contra Hayashi 1975) | SB | Funchal, Madeira | Madeira; Canary Is.; Gulf of Guinea; also in Central Atlantic (Ascension I) and Western Atlantic (see below) | Gordon 1935, Manning & Chace 1990, d'Udekem d'Acoz 1999, Wirtz 2004 |
| ***Lysmata nilita*** Dohrn & Holthuis, 1950 | Valid | LB | Bay of Naples, Italy | Mediterranean Sea | Dohrn & Holthuis 1950 |
| ***Lysmata olavoi*** Fransen, 1991 | Valid | SB | Ponto da Ilha, Azores | Azores | Fransen 1991 |
| ***Lysmata seticaudata*** (Risso, 1816) | Valid; synonym: *Lysmata aberrans* Czerniavsky, 1884 | LB | Nice, France | Mediterranean Sea; Black Sea | Risso 1816, d'Udekem d'Acoz 1999, 2001 |
| ***Lysmata stenolepis*** Crosnier & Forest, 1973 | Valid | SB | off São Tiago, Cape Verde | Cape Verde | Crosnier & Forest 1973 |
| ***Lysmata uncicornis*** Holthuis & Maurin, 1952 | Valid | SB (unguiform) | Casablanca, Morocco | Morocco; Canary Is. | Holthuis & Maurin 1952 |

Table 1 continued

| Species | Taxonomic status | Species group | Type Locality | Distribution Range | Main References |
|---|---|---|---|---|---|
| **II. Western Atlantic species** | | | | | |
| ***Lysmata anchisteus*** Chace, 1972 | Valid | SB (unguiform) | Grenada, Lesser Antilles | Lesser Antilles | Chace 1972 |
| ***Lysmata ankeri*** Rhyne & Lin, 2006 | Valid | SB | Pompano Beach, Florida [HT]; Haiti | S Florida; Caribbean; NE Brazil | Rhyne & Lin 2006 |
| ***Lysmata bahia*** Rhyne & Lin, 2006 | Valid | SB | Salvador, Brazil | Bahia, Brazil | Rhyne & Lin 2006 |
| ***Lysmata boggessi*** Rhyne & Lin, 2006 | Valid | SB | Hernando Beach, Florida [HT]; SW Florida; Florida Keys | S and W Florida | Rhyne & Lin 2006 |
| ***Lysmata grabhami*** (Gordon, 1935) | Valid (contra Hayashi 1975) | SB | Funchal, Madeira | Bermuda; Florida Keys; Bahamas; Caribbean; also in Central and Eastern Atlantic (see above) | Chace 1972, Sterrer 1986 |
| ***Lysmata hochi*** Baeza & Anker, 2008 | Valid | SB (unguiform) | Bocas del Toro, Panama | Panama; Costa Rica; Florida | Baeza & Anker 2008 |
| ***Lysmata intermedia*** (Kingsley, 1879) | Valid, but in need of revision (several cryptic species) | LB | Dry Tortugas, Florida | Florida; Caribbean | Kingsley 1879, Chace 1972, D'Udekem d'Acoz 2001 |
| ***Lysmata moorei*** (Rathbun, 1901) | Valid, but in need of revision (several cryptic species) | LB | Ponce, Puerto Rico | Caribbean; NE Brazil; possibly also in Central Atlantic (Ascension I.), latter record needs verification | Rathbun 1901, Chace 1972, Manning & Chace 1990, Christoffersen 1998 |
| ***Lysmata pederseni*** Rhyne & Lin, 2006 | Valid | SB | Florida Keys | S and W Florida; Bahamas; Caribbean | Rhyne & Lin 2006 |
| ***Lysmata rafa*** Rhyne & Anker, 2007 | Valid | SB | Key West, Florida | S Florida | Rhyne & Anker 2007 |

| | | | | | |
|---|---|---|---|---|---|
| ***Lysmata rathbunae*** Chace, 1970 | Valid | SB | off Boynton Beach, Florida | S and W Florida | Chace, 1970, Rhyne & Lin 2006 |
| ***Lysmata rauli*** Laubenheimer & Rhyne, 2010 | Valid | SB | Bahia | Brazil | Laubenheimer & Rhyne 2010 |
| ***Lysmata udoi*** Baeza, Bolaños, Hernandez & López, 2009 | Valid | SB | Isla Margarita, Venezuela | S Caribbean | Baeza et al. 2009a |
| ***Lysmata wurdemanni*** (Gibbes, 1850) | Valid, but further studies needed (see Rhyne et al. 2009) | SB | Key West, Florida | New Jersey to Florida and Texas | Gibbes 1850, Rhyne & Lin 2006, Rhyne et al. 2009 |
| **III. Eastern Pacific species** | | | | | |
| ***Lysmata argentopunctata*** Wicksten, 2000 | | LB | Sonora, Mexico [HT]; Baja California, Mexico; mainland Ecuador; Galapagos | Gulf of California to Costa Rica and mainland Ecuador; Galapagos | Wicksten 2000a |
| ***Lysmata californica*** (Stimpson, 1866) | Valid | SB | San Diego, California | California to Mexico | Stimpson 1866, Jensen 1995, Wicksten 2000a |
| ***Lysmata chica*** Wicksten, 2000 | Valid | LB | Isla Isabela, Galapagos [HT]; mainland Ecuador | Galapagos; mainland Ecuador | Wicksten 2000a |
| ***Lysmata galapagensis*** Schmitt, 1924 | Valid | LB | Isla Eden, Galapagos | Baja California to Colombia; Galapagos | Schmitt 1924, Wicksten 2000a |
| ***Lysmata gracilirostris*** Wicksten, 2000 | Valid | SB | Golfo de Papagayo, Costa Rica | Galapagos; Panama and Costa Rica to Socorro, Mexico | Wicksten, 2000a, 2000b |
| ***Lysmata holthuisi*** Anker, Baeza & De Grave, 2009 | Valid | LB | Amador and Taboga I., Panama | Panama | Anker et al. 2009 |
| ***Lysmata nayaritensis*** Wicksten, 2000 | Valid | SB | Nayarit, Mexico [HT]; Pacific entrance of Panama Canal, Panama | Nayarit, Mexico to Panama | Wicksten 2000a |

Table 1 continued

| Species | Taxonomic status | Species group | Type Locality | Distribution Range | Main References |
|---|---|---|---|---|---|
| ***Lysmata porteri*** (Rathbun, 1907) | Valid | SB | Valparaiso, Chile | C Chile and Juan Fernandez Is. | Rathbun 1907, Wicksten 2000a |
| ***Lysmata trisetacea*** (Heller, 1861) | Valid, but status of Eastern Pacific specimens needs confirmation | LB? | Red Sea | Mexico; Gulf of California, Clipperton I.; Malpelo I., Colombia | Wicksten 2000a; Hendrickx & Wicksten 2003 |
| **IV. Indo-West Pacific species** | | | | | |
| *Lysmata acicula* (Rathbun, 1906) | Needs reinvestigation, currently synonym of ***L. ternatensis*** | LB | Kauai, Hawaii | Hawaii* | Rathbun 1906, Chace 1997 |
| *Lysmata affinis* Borradaile, 1915 | Needs reinvestigation, currently synonym of ***L. ternatensis*** | See *L. ternatensis* | Lakshadweep (Laccadive Is.), Seychelles, Chagos Is. | Central Indian Ocean* | Borradaile 1915 |
| ***Lysmata amboinensis*** (de Man, 1888) | Valid | SB | Ambon, Indonesia | Red Sea; Kenya; Maldives; Vietnam; Japan; Philippines; Indonesia; Australia; French Polynesia; Hawaii | de Man 1888, Chace 1997 |
| *Lysmata chiltoni* Kemp 1914 | Needs reinvestigation, currently synonym of L. trisetacea | LB | Kermadec Is, New Zealand | New Zealand* | Kemp 1914 |
| ***Lysmata debelius*** Bruce, 1983 | Valid | SB | E of Luzon, Philippines | Philippines; Indonesia; S Japan | Bruce 1983, Chace 1997 |
| ***Lysmata dispar*** Hayashi, 2007 | Valid | SB | Dampier Archipelago, W Australia | NW Australia | Hayashi 2007 |
| *Lysmata durbanensis* (Stebbing 1921) | Needs reinvestigation, currently synonym of ***L. vittata*** | See *L. vittata* | Durban Bay, South Africa | SE Africa* | Stebbing 1921, Barnard 1947 |

| | | | | | |
|---|---|---|---|---|---|
| ***Lysmata guamensis*** n. sp. | Valid | SB | Guam | Mariana Is. | Present study |
| ***Lysmata kempi*** Chace, 1997 | Valid; synonym: Hippolysmata dentata Kemp, 1914 | SB | off Irrawaddy delta, Myanmar | Myanmar | Kemp 1914, Chace 1997 |
| ***Lysmata kuekenthali*** (de Man, 1902) | Valid, but in need of revision; possible synonym: *Hippolysmata marleyi* Stebbing, 1919 | SB (unguiform) | Flores, Indonesia | South Africa; Seychelles; Sri Lanka; Indonesia; Philippines; Japan; not in Hawaii (record by Edmondson 1946, see Chace 1997) | de Man 1902, Stebbing 1919, Chace 1997 |
| ***Lysmata lipkei*** Okuno & Fiedler, 2010 | Valid | SB | Honshu and Ryukyu Is., Japan | Japan | Okuno & Fiedler 2010 |
| *Lysmata marleyi* (Stebbing, 1921) | Needs reinvestigation, currently synonym of ***L. kuekenthali*** | See *L. kuekenthali* | Natal, South Africa | SE Africa* | Stebbing 1919, Barnard 1947 |
| ***Lysmata morelandi*** (Yaldwyn, 1971) | Valid | SB (unguiform) | Bay of Islands, New Zealand | New Zealand; SE Australia | Yaldwyn 1971, Hanamura 2008 |
| ***Lysmata multiscissa*** (Nobili, 1904) | Valid, needs redescription | SB (?) | Djibouti | Gulf of Aden | Nobili 1904 |
| *Lysmata paucidens* (Rathbun, 1906) | Needs reinvestigation, currently synonym of ***L. trisetacea*** | unknown | Oahu, Hawaii | Hawaii* | Rathbun 1906 |
| ***Lysmata philippinensis*** Chace, 1997 | Valid | SB | SE Luzon, Philippines | Philippines | Chace 1997 |
| *Lysmata pusilla* Heller, 1862 | Needs reinvestigation, currently synonym of ***L. trisetacea*** | See *L. trisetacea* | Red Sea | Red Sea* | Heller 1862 |
| ***Lysmata splendida*** Burukovsky, 2000 | Valid | SB | Maldives | Maldives; Sri Lanka | Burukovsky 2000 |

Table 1 continued

| Species | Taxonomic status | Species group | Type Locality | Distribution Range | Main References |
|---|---|---|---|---|---|
| *Lysmata subtilis* (Thallwitz, 1891) | Needs reinvestigation, currently synonym of ***L. vittata*** | See *L. vittata* | Cebu, Philippines | Philippines* | Thallwitz 1891 |
| ***Lysmata ternatensis*** de Man, 1902 | Valid, but in need of revision; synonym: *Lysmata dentata* (De Haan, 1844); possible synonyms: *Lysmata affinis* Borradaile, 1915; *Lysmata acicula* (Rathbun, 1906) | LB | Ternate, Indonesia | Lakshadweep (Laccadive Is.); Seychelles; Chagos Is.; Sri Lanka; Indonesia; Japan; Hawaii ? *(L. acicula)* | de Man 1902; Rathbun 1906, Chace 1997 |
| ***Lysmata trisetacea*** (Heller, 1861) | Valid, but in need of revision; possible synonyms: *Lysmata pusilla* Heller, 1862; *Lysmata paucidens* (Rathbun, 1906); *Lysmata chiltoni* Kemp, 1914 | LB? | Red Sea | Red Sea to Micronesia; Hawaii ? *(L. paucidens);* New Zealand ? *(L. chiltoni);* records from Eastern Pacific need confirmation (see above) | Heller 1861, 1862, Rathbun 1906, Kemp 1914, Chace 1997 |
| *Lysmata unirecedens* (Bate, 1888) | Synonym of ***L. vittata*** | See *L. vittata* | Hong Kong | Hong Kong* | Bate 1888, Chace 1997 |
| ***Lysmata vittata*** (Stimpson, 1860) | Valid, but in need of revision; synonym: *Nauticaris unirecedens* Bate 1888; possible synonyms: *Hippolysmata vittata subtilis* Thallwitz, 1891; *Hippolysmata durbanensis* Stebbing, 1921 | SB | Hong Kong | SE Africa; Hong Kong; Japan; Philippines; Indonesia; Australia | Stimpson 1860, Bate 1888, Thallwitz 1891, Stebbing 1921, Hayashi & Miyake 1968, Bruce 1990, Chace 1997 |
| ***Lysmata zacae*** Armstrong, 1941 | Valid | LB | Savai'i, Samoa | Samoa; New Caledonia; Japan | Armstrong 1941, Okuno 1996 |

## Taxonomy

**Hippolytidae** Bate, 1888 [**Lysmatidae** Dana, 1852]
***Lysmata*** Risso, 1816
***Lysmata guamensis* n. sp.**

Figs. 1–3

**Type material. –** Holotype: ovigerous female (possibly euhermaphrodite) (CL 6.30 mm, PCL 4.15 mm, TL 19.80 mm), FLMNH UF Arthropoda 1229, Mariana Archipelago, Guam, Glass Breakwater near mouth of Apra Harbor, "among rocks" [but see below], 3–6 m, coll. H. T. Conley, 17 October 2001.

**Description. –** Medium-sized species of *Lysmata*. Carapace relatively high, smooth, with two teeth on mid-dorsal line, first situated on carapace, distinctly posterior to level of post-orbital margin (PODT), second situated on rostrum, at about 3/5 of rostrum length (RDT). Rostrum slightly more than half as long as carapace, reaching beyond mid-length of second segment of antennular peduncle (Fig. 1a, c); tip acute; lateral ridge feebly developed; ventral margin with four well-developed teeth (RVT) (Fig. 1b). Total carapace teeth formula: 1+1/4. Antennal tooth strong, reaching beyond base of cornea. Pterygostomial angle broadly rounded, without tooth (Fig. 1b).

First to third abdominal pleurae rounded ventrally; fourth and fifth with subacute or acute posteroventral tooth; sixth pleurite with sharp posteroventral tooth (Fig. 1d). Telson slender, slightly more than three times as long as wide proximally, tapering posteriorly; dorsal surface with two pairs of spines at about 0.5-0.6 and 0.8 of telson length, respectively (Fig. 1e); posterior margin somewhat produced centrally, with two long, robust setae flanked on each side by two spines, mesial spine at least four times as long as lateral spine (Fig. 1f).

Eyestalk with well-developed cornea, its dorsal margin not reaching dorsal margin of rostrum (Fig. 1b). Antennular peduncle moderately robust; first segment longest, with stylocerite reaching to or almost to distal margin; second segment slightly longer than wide, longer than third segment; lateral flagellum with groups of aesthetascs starting from second segment (Fig. 1b); accessory branch very short, stump-like (Fig. 1g), situated at 18th segment; mesial flagellum distinctly thinner than lateral. Antenna with short basicerite bearing small subacute tooth distoventrally; carpocerite very short, not exceeding level of anterior margin of corneas (Fig. 1b); scaphocerite subrectangular, elongate, reaching far beyond distal margin of antennular peduncle, with strong distolateral tooth, blade narrow, rounded distally, not reaching tip of distolateral tooth (Fig. 1a).

Mouthparts not dissected, appearing typical for genus in external observation. Third maxilliped long, slender, antepenultimate segment slightly longer than ultimate segment, with small spines distolaterally (Fig. 1h); penultimate segment about half as long as ultimate segment; ultimate segment tapering distally, tip with circle of six spines (Fig. 1i); exopod short, reaching to half-length of antepenultimate segment; lateral plate well-developed; arthrobranch present (Fig. 1h).

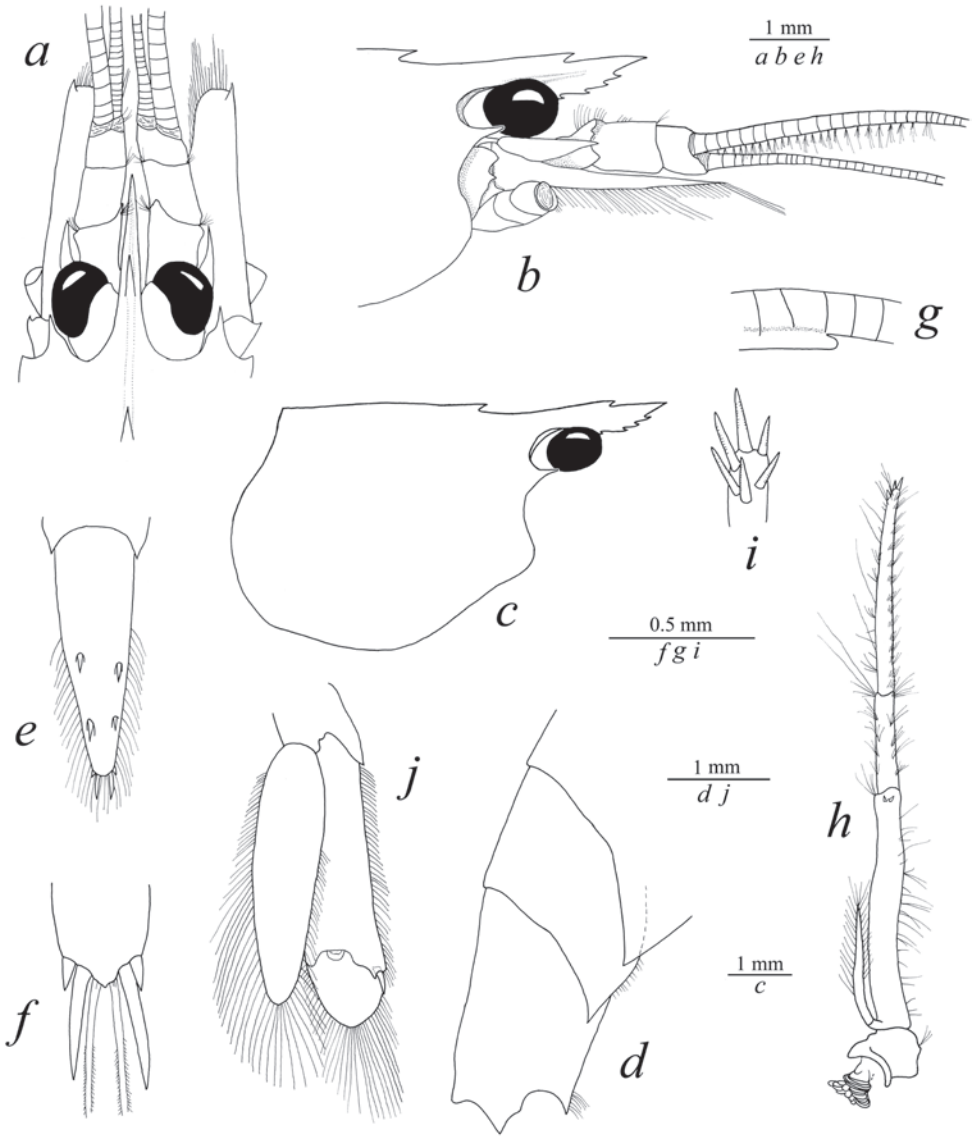


Figure 1. *Lysmata guamensis* n. sp., holotype, ovigerous female (possibly hermaphrodite), PCL 4.15 mm, FLMNH UF Arthropoda 1229: a, anterior region, dorsal view; b, same, lateral view; c, carapace, lateral view; d, abdomen, posterior pleurites, lateral view; e, telson, dorsal view; f, same, detail of posterior margin; g, detail of accessory branch of antennular flagellum, lateral view; h, third maxilliped, lateral view; i, same, tip of ultimate segment, dorsal view; j, uropod, dorsal view. Scale bars as indicated.

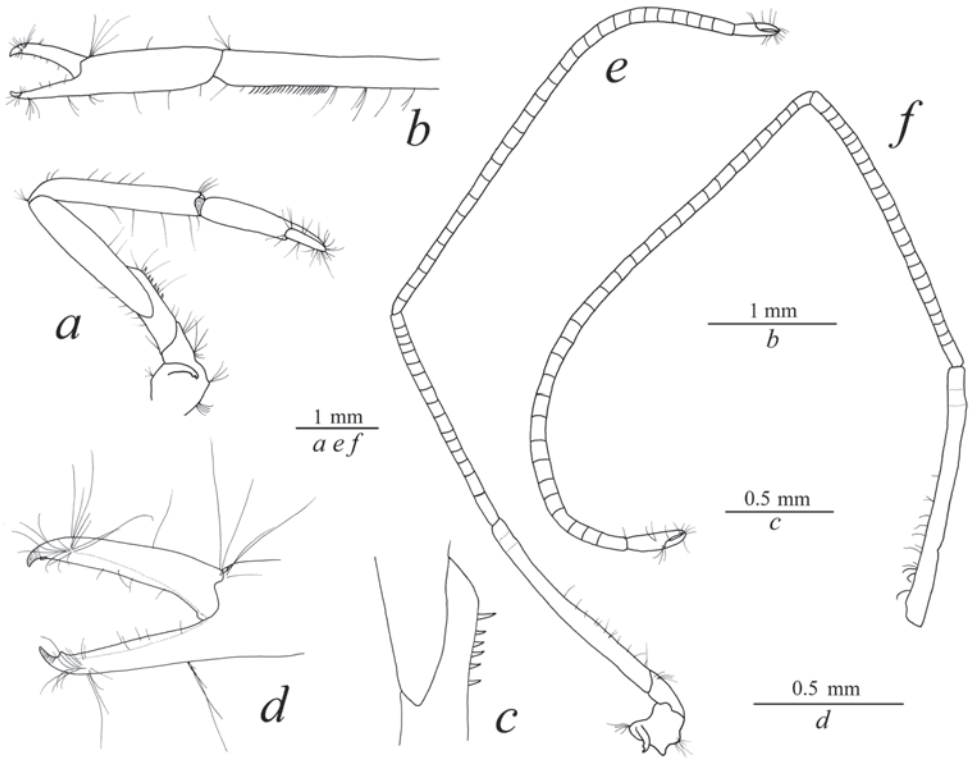


Figure 2. *Lysmata guamensis* n. sp., holotype, ovigerous female (possibly hermaphrodite), PCL 4.15 mm, FLMNH UF Arthropoda 1229: a, first pereiopod, lateral view; b, same, propodus and chela, mesial view; c, same, detail of ischium, lateral view; d, same, chela with fingers opened; e, right second pereiopod, lateral view; f, left second pereiopod, lateral view. Scale bars as indicated.

First pereiopod (cheliped) fairly slender, with not particularly enlarged chela (Fig. 2a); ischium with row of small spinules on ventral margin distally; merus slightly shorter than carpus; carpus cylindrical, elongate, around six times as long as wide, with rows of grooming setae mesioventrally (Fig. 2b); chela simple, smooth, slender, with fingers about half as long as palm; cutting edges of fingers unarmed except for two bump-like teeth near corneous finger tips (Fig. 2c).

Second pereiopod (P2) slender, with carpus bearing 28 (right P2) and 32 (left P2) articles; merus with 16 (right P2) and 24 (left P2) articles; ischium with two barely visible subdivisions distally (Fig. 2e, f). Third to fifth pereiopods (P3-5) very slender, elongate, similar in shape and length, but different in article proportions and armature; ischia unarmed. P3 (Fig. 3a) with merus around 22 times as long as wide, armed with six spines on ventrolateral surface; carpus around 0.6 times as long as merus, with three spinules on ventral surface; propodus subequal in length to carpus, with five spinules on ventral margin, including one distal spinule adjacent to dactylus; dactylus fairly slender, biunguiculate distally, ventral (flexor) margin with two additional spines (Fig. 3b). P4 (Fig. 3c) generally similar to P3;

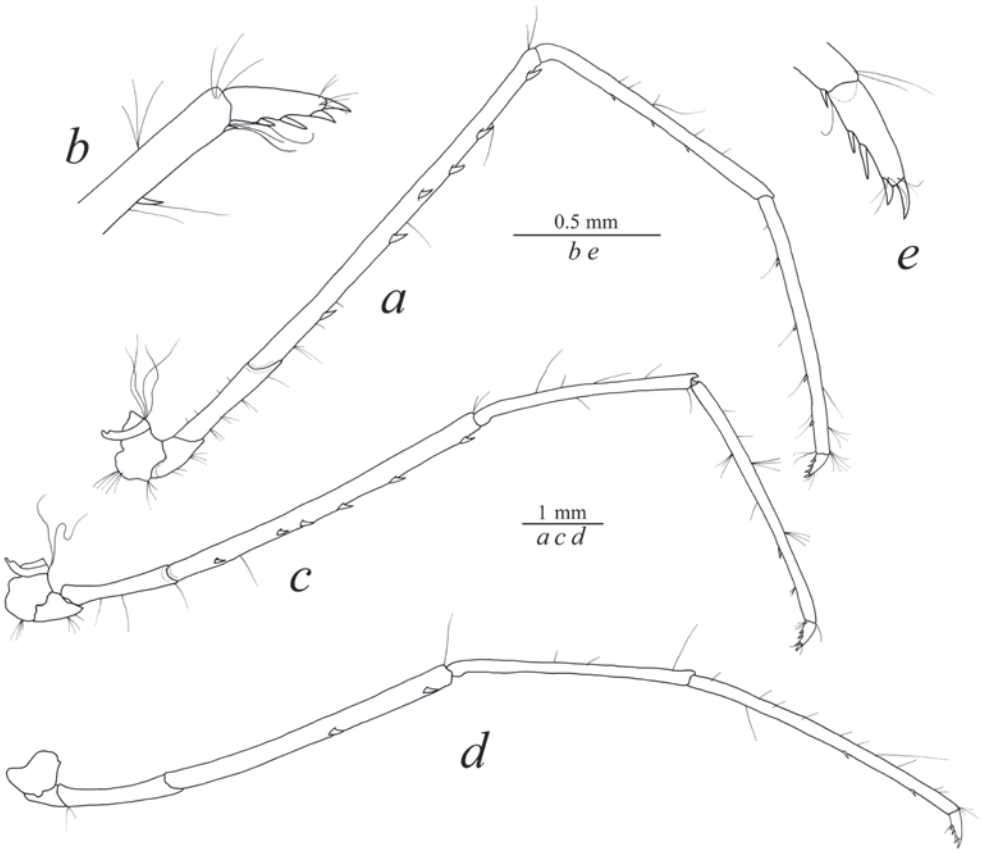


Figure 3. *Lysmata guamensis* n. sp., holotype, ovigerous female (possibly hermaphrodite), PCL 4.15 mm, FLMNH UF Arthropoda 1229: a, third pereiopod, lateral view; b, same, detail of distal propodus and dactylus; c, fourth pereiopod, lateral view; d, fifth pereiopod, lateral view; e, same, dactylus. Scale bars as indicated.

merus slightly shorter that in P3, armed with six spines on ventrolateral surface; carpus distinctly shorter than in P3, without spinules; propodus with four spinules on ventral margin, including one distal spinule adjacent to dactylus; dactylus as in P3. P5 (Fig. 3d) with merus distinctly shorter than in P3 and P4, around 14 times as long as wide, armed with two spines on ventrolateral surface; carpus 0.9 times as long as merus, unarmed; propodus longer than in P3 and P4, slender, with three spinules on ventral, including one distal spinule adjacent to dactylus; dactylus as in P3 and P4, slightly more slender (Fig. 3e).

Uropod with slender endopod and exopod, without other specific features (Fig. 1j). Gill/exopod formula typical for genus. Colour pattern unknown.

**Type locality. –** Apra Harbor, Guam, Mariana Archipelago.

**Etymology. –** Species name refers to Guam, the island of the type locality.

**Ecology. –** The only field notes available are "among rocks, 10-20 feet" (3–6 m); however, most crustaceans collected by H. T. Conley were caught by hand or

with a small dip net by excavating piles of dead corals and loose coral rubble, to a depth of 1 m or even deeper (see also Dennis & Aldhous 2004).

**Distribution. –** Presently known only from the type locality, Guam.

**Remarks. –** *Lysmata guamensis* n. sp. belongs to the SB (= short-branch) species group (see above), although without genetic data and colour pattern it is difficult to find its closest relatives. In the Indo-West Pacific, at least 12 species of *Lysmata* have a short accessory branch on the lateral antennular flagellum (cf. Table 1): *L. guamensis* n. sp.; *L. amboinensis* (De Man, 1888); *L. debelius* Bruce, 1983; *L. splendida* Burukovsky, 2000; *L. vittata* (Stimpson, 1860); *L. multiscissa* (Nobili, 1904); *L. kuekenthali* (De Man, 1902); *L. morelandi* (Yaldwyn, 1971); *L. kempi* Chace, 1997; *L. philippinensis* Chace, 1997; *L. dispar* Hayashi, 2007; and *L. lipkei* Okuno & Fiedler, 2010. All but the new species have at least four and usually more than four dorsal teeth on the carapace mid-line (PODT + RDT = 5 in *L. splendida, L. debelius, L. morelandi;* 6 in *L. dispar;* 4–5 in *L. philippinensis* and *L. lipkei;* 4–8 in *L. vittata;* 8 in *L. multiscissa* and *L. kempi;* 5–7 in *L. amboinensis;* 4–7 in *L. kuekenthali*). To our best knowledge, *L. guamensis* n. sp. is the only species with two teeth on the mid-dorsal line of the carapace (1 PODT + 1 RDT); this is the lowest number of the dorsal carapace teeth known in the genus *Lysmata*. In the western/eastern Atlantic and eastern Pacific species, the number of PODT + RDT ranges from five to eight.

In addition, *L. guamensis* n. sp. is characterised by the very long, slender walking legs (P3-5), with the ratio length / width of the merus of the third pereiopod (= L/W MP3) being close to 22. Among other above-mentioned species, the species with the longest and most slender P3–5 are *L. kempi,* with L/W MP3 close to 18 (Kemp 1914, as *Hippolysmata dentata*) and *L. philippinensis,* with L/W MP3 around 14.5 (Chace 1997). Among the American species, the species with the longest and most slender P3–5 are *L. rafa* Rhyne & Anker, 2007 and *L. gracilirostris* Wicksten, 2000, both with L/W MP3 close to 20 (Wicksten 2000b, Rhyne & Anker 2007); and *L. rathbunae* Chace, 1972, with L/W MP3 around 15 (Chace, 1970). In the eastern Atlantic, *L. olavoi* Fransen, 1991 is the only species with extremely long P3–5 with the L/W MP3 close to that of *L. guamensis* n. sp. (see Fransen 1991). However, none of the above-listed slender-legged species appears to be closely related to *L. guamensis* n. sp. based on other morphological characters (rostrum, P2 carpus, etc.).

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