Report on some species of Palaemonidae (Crustacea, Decapoda) from French Polynesia

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ABSTRACT
Based on material collected from French Polynesia and deposited in the Muséum national d'Histoire naturelle, Paris, the present paper reports 31 palaemonid shrimp species, which belong to the Palaemoninae (two genera, three species) and to the Pontoniinae (12 genera, 28 species), including six new species. The new species are: *Izucaris crosnieri* n. sp., *Periclimenes alexanderi* n. sp., *P. josephi* n. sp., *P. platydactylus* n. sp., *P. polynesiensis* n. sp. and *P. vicinus* n. sp. Detailed descriptions and illustrations of the new species are provided. Besides the six new species, ten other species are recorded for the first time from French Polynesia: *Exoclimenella maldivensis* Duris & Bruce, 1995, *Kemponia rapanui* (Fransen, 1987) n. comb., *Palaemonella crosnieri* Bruce, 1978, *P. spinulata* Yokoya, 1936, *Periclimenaeus hecate* (Nobili, 1904), *P. orbitocarinatus* Fransen, 2006, *Periclimenes aleator* Bruce, 1991, *P. paralcocki* Li & Bruce, 2006, *P. uniunguiculatus* Bruce, 1990, *Pontonides loloata* Bruce, 2005.

KEY WORDS
Crustacea,
Decapoda,
Palaemonidae,
French Polynesia,
new species,
new records,
new combination.

RÉSUMÉ
Sur quelques espèces de Palaemonidae (Crustacea, Decapoda) de Polynésie française.
Sur la base de matériel récolté en Polynésie française et conservé au Muséum national d'Histoire naturelle, Paris, la présente étude porte sur 31 espèces de crevettes Palaemonidae appartenant aux Palaemoninae (deux genres et trois espèces) et aux Pontoniinae (12 genres et 28 espèces) dont six nouvelles. Les nouvelles espèces sont : *Izucaris crosnieri* n. sp., *Periclimenes alexanderi* n. sp., *P. josephi* n. sp., *P. platydactylus* n. sp., *P. polynesiensis* n. sp. et *P. vicinus* n. sp. Des descriptions détaillées et illustrées de ces espèces nouvelles sont faites. Par ailleurs, dix autres espèces sont signalées pour la première fois en Polynésie à savoir : *Exoclimenella maldivensis* Duris & Bruce, 1995, *Kemponia rapanui* (Fransen, 1987) n. comb., *Palaemonella crosnieri* Bruce, 1978, *P. spinulata* Yokoya, 1936, *Periclimenaeus hecate* (Nobili, 1904), *P. orbitocarinatus* Fransen, 2006, *Periclimenes aleator* Bruce, 1991, *P. paralcocki* Li & Bruce, 2006, *P. uniunguiculatus* Bruce, 1990, *Pontonides loloata* Bruce, 2005.

MOTS CLÉS
Crustacea,
Decapoda,
Palaemonidae,
Polynésie française,
espèces nouvelles,
signalements nouveaux,
nouvelle combinaison.

INTRODUCTION

The palaemonid fauna of Polynesia is still poorly known. Recently, some reports on this family, particularly the subfamily Pontoniinae Kingsley, 1878, from French Polynesia were published. Bruce (1989) described *Periclimenes poupini* Bruce, 1989 from the Austral Islands and Gambier Islands, then Poupin (1996) recorded this species from the Society Islands and Tuamotu Islands. Poupin (1998) listed 21 genera and 45 species of the family Palaemonidae Rafinesque, 1815 from French Polynesia, including three genera and nine species of the subfamily Palaemoninae Rafinesque, 1815 and 18 genera and 36 species of the subfamily Pontoniinae. Bruce (2004a) added *Epipontonia tahitiensis* Bruce, 2004 to the palaemonid fauna of French Polynesia.

The present paper reports some shrimp material of the family Palaemonidae deposited in the collections of the Muséum national d'Histoire naturelle, Paris, collected from the islands of French Polynesia, i.e., the Austral, Marquesas, Society and Tuamotu islands, during joint campaigns of the Muséum national d'Histoire naturelle, and the Institut de Recherche pour le Développement (formerly Office de la Recherche scientifique et technique d'Outre-Mer). Thirty-one palaemonid shrimp species are reported in the present paper, of which, two genera and three species belong to Palaemoninae and 12 genera and 28 species belong to Pontoniinae; six species are new, ten are newly recorded from French Polynesia, six are newly recorded from the Austral Islands and one is new for Marquesas Islands. Up to now, there have been about 23 genera and 55 species of Palaemonidae found from French Polynesia, including three genera and nine species of Palaemoninae and 20 genera and 46 species of Pontoniinae.

The specimens are all deposited in the collections of the Muséum national d'Histoire naturelle, Paris, except special notice. The references provided are restricted to important works and previous reports from French Polynesia.

Abbreviations

cl	postorbital carapace length;
coll.	collector(s);
MNHN	Muséum national d'Histoire naturelle, Paris;
RMNH	Nationaal Natuurhistorisch Museum, Leiden;
ovig.	ovigerous;
spms	specimens.

The rostral formula is presented as "a+b/c" (a, number of dorsal rostral teeth posterior to the orbital margin; b, number of dorsal rostral teeth anterior to the orbital margin; c, number of the ventral rostral teeth) or "b/c" if there is no dorsal rostral tooth on the carapace posterior to the orbital margin.

SPECIES LIST

Subfamily Palaemoninae Rafinesque, 1815
- *Brachycarpus biunguiculatus* (Lucas, 1846)
- *Palaemon concinnu*s Dana, 1852
- *Palaemon debilis* Dana, 1852

Subfamily Pontoniinae Kingsley, 1878
- *Conchodytes meleagrinae* Peters, 1852
- *Coralliocaris viridis* Bruce, 1974
- *Exoclimenella maldivensis* Duris & Bruce, 1995
- *Harpiliopsis depressa* (Stimpson, 1860)
- *Harpiliopsis spinigera* (Ortmann, 1890)
- ***Izucaris crosnieri*** n. sp.
- *Jocaste lucina* (Nobili, 1901)
- *Kemponia elegans* (Paulson, 1875)
- *Kemponia ensifrons* (Dana, 1852)
- *Kemponia grandis* (Stimpson, 1860)
- *Kemponia rapanui* (Fransen, 1987) n. comb.
- *Palaemonella crosnieri* Bruce, 1978
- *Palaemonella lata* (Dana, 1852)
- *Palaemonella spinulata* Yokoya, 1936
- *Palaemonella tenuipes* Dana, 1852
- *Paranchistus pycnodontae* Bruce, 1978b
- *Periclimenaeus hecate* (Nobili, 1904)
- *Periclimenaeus orbitocarinatus* Fransen, 2006
- *Periclimenes aleator* Bruce, 1991
- ***Periclimenes alexanderi*** n. sp.
- ***Periclimenes josephi*** n. sp.
- *Periclimenes paralcocki* Li & Bruce, 2006
- ***Periclimenes platydactylus*** n. sp.
- ***Periclimenes polynesiensis*** n. sp.
- *Periclimenes soror* Nobili, 1904
- *Periclimenes uniunguiculatus* Bruce, 1990
- ***Periclimenes vicinus*** n. sp.
- *Pontonides loloata* Bruce, 2005

SYSTEMATICS

Family Palaemonidae Rafinesque, 1815
Subfamily Palaemoninae Rafinesque, 1815

Genus *Brachycarpus* Bate, 1888

Brachycarpus biunguiculatus (Lucas, 1846)

Palaemon biunguiculatus Lucas, 1846: 45, pl. 4, fig. 4.

Brachycarpus biunguiculatus – Kemp 1925: 312-314. — Holthuis 1952a: 3-10, pl. 1, figs a-q. — Morrison 1954: 18. — Bruce 1996: 200, figs 1a-c, 28a, 30. — Poupin 1998: 11; 2003: 21. — Li & Bruce 2006: 618.

MATERIAL EXAMINED. — **Austral Is.** Rapa I., Pointe Komire, BENTHAUS, malacologist fieldwork, stn 10, 27°34.8'S, 144°22.8'W, 16-18 m, stones with brown algae, 7.XI.2002, 2 ♀♀ (MNHN-Na 15430). — SW Pointe Gotenaonao, BENTHAUS, malacologist fieldwork, stn 27, 27°38.7'S, 144°19.2'W, 6 m, stones with algae, 14.XI.2002, 1 ♀ (MNHN-Na 15429).

DISTRIBUTION. — Type localities: Oran and Bone, Algeria. Previously known from the Red Sea; Zanzibar, Sri Lanka, Ryukyu Is, New Caledonia, Loyalty Is, Chesterfield Is, Caroline Is, French Polynesia (Tuamotu Is), Wake Is, Hawaii, and known extensively in the Eastern Pacific, eastern and western Atlantic and western Mediterranean region; 0-56 m depth. Not previously recorded from Austral Islands.

REMARKS

Specimens from Rapa and one from Pointe Komire lack their second pereiopods, but both second pereiopods of another female of Point Komire are present. Their rostra reach approximately the end of the antennal scale, but do not far overreach it as in *B. crosnieri* Bruce, 1998.

Genus *Palaemon* Weber, 1795

Palaemon concinnus Dana, 1852

Palaemon concinnus Dana, 1852: 26; 1855: 12, pl. 38, fig. 10. — Sendler 1923: 46. — Holthuis 1950: 61, fig. 12; 1953: 54. — Marquet 1988: 90; 1991: 136, tabs 1, 2; 1993: tabs 1, 3. — Nguyen 1992: 31, fig. 6. — Chace & Bruce 1993: 40. — Keith & Vigneux 1997: 22, tab. 2; 2002: 126, photos 9, 10. — Poupin 1998: 12. — Keith *et al.* 2002: 46, 2 unnumb. figs.

MATERIAL EXAMINED. — **Polynesia.** No detailed collection data, 16 ♀♀ (13 ovig.), 16 juveniles (MNHN-Na 15432).

DISTRIBUTION. — Type locality: Fiji Is. Previously also known from South Africa to Red Sea, eastwards to Indonesia, Philippines, South China Sea, Japan, Australia (Queensland), Marshall Is and French Polynesia (Austral Is, Society Is, Tuamotu Is); littoral.

Palaemon debilis Dana, 1852

Palaemon debilis Dana, 1852: 26. — Nobili 1907: 363. — Seurat 1934: 60. — Holthuis 1953: 54. — Morrison 1954: 5. — Marquet 1988: 90, fig. 48, tab. 23; 1991: 136, tabs 1, 2; 1993: tabs 1, 3. — Bruce 1991a: 227, figs 1d, 3f. — Chace & Bruce 1993: 40. — Keith & Vigneux 1997: 22, tab. 2; 2002: 127, photos 11, 12. — Poupin 1998: 12. — Keith *et al.* 2002: 48, 2 unnumb. figs — Li *et al*. 2004: 521, fig. 9. — Li & Bruce 2006: 620.

Palaemon (*Palaemon*) *debilis* – Holthuis 1950: 66-70, fig. 13.

MATERIAL EXAMINED. — **Polynesia.** Coll. Y. Plessis, no. 79063, no detailed collection data, 252 spms (46 ovig. ♀♀) (MNHN-Na 15433).

DISTRIBUTION. — Type locality: Hilo, Hawaii. A common species throughout most of the Indo-West Pacific region from the Gulf of Suez to French Polynesia (Austral Is, Gambier, Tuamotu Is); littoral.

Subfamily PONTONIINAE Kingsley, 1878
Genus *Conchodytes* Peters, 1852

Conchodytes meleagrinae Peters, 1852

Conchodytes meleagrinae Peters, 1852: 594. — Nobili 1907: 359. — Seurat 1934: 60. — Holthuis 1953: 59. — Bruce 1991a: 262, fig. 25a-d. — Chace & Bruce 1993: 74. — Poupin 1998: 13. — Li 2000: 25, fig. 26. — Li & Bruce 2006: 628.

MATERIAL EXAMINED. — **Tuamotu Is.** Mururoa, 25.XI.1965, coll. Y. Plessis, no. 651125008, 1 ♂ (MNHN-Na 15438).

HOST. — *Pinctata margaritifera* (Linnaeus, 1758) (Mollusca, Bivalvia, Pterioida, Pteriidae). Previously reported associating with this host by Seurat (1934) from Tuamotu Islands.

DISTRIBUTION. — Type locality: Mozambique (Ibo, Cabo Delgado), southeast coast of Africa. Widespread in the Indo-Pacific, from the Red Sea eastward to Hawaii and French Polynesia (Gambier, Tuamotu Is); 0-30 m depth with certainty. Previously recorded from Tuamotu Islands by Seurat (1934) and Holthuis (1953).

Genus *Coralliocaris* Stimpson, 1860

Coralliocaris viridis Bruce, 1974

Coralliocaris viridis Bruce, 1974a: 222-224, fig. 1. — Odinetz 1983: 207. — Chace & Bruce 1993: 78. — Poupin 1998: 14. — Li 2000: 38, fig. 38. — Li & Bruce 2006: 230.

MATERIAL EXAMINED. — **Tuamotu Is.** IV.1996, coll. J. Poupin, 1 ovig. ♀ (MNHN-Na 15944).

HOST. — *Acropora* sp. (Cnidaria, Anthozoa, Scleractinia, Acroporidae). Previously reported associating with species of *Acropora* Oken, 1815 by Poupin (1998) from Tuamotu Islands.

DISTRIBUTION. — Type locality: Mombassa Island, Kenya. Previously also known from Mozambique, Seychelles, Maldives, Sri Lanka, Vietnam, Ryukyu Is, Indonesia, Papua New Guinea, Australia (Northern Territory and Queensland) and French Polynesia (Society Is, Tuamotu Is); 1-14 m depth with certainty. Previously recorded from Tuamotu Islands by Poupin (1998).

Genus *Exoclimenella* Duris & Bruce, 1995

Exoclimenella maldivensis Duris & Bruce, 1995

Exoclimenella maldivensis Duris & Bruce, 1995: 622, figs 1-5. — Li & Bruce 2006: 633.

MATERIAL EXAMINED. — **Austral Is.** Rapa I., Pointe Teruametitoi, BENTHAUS, malacologist fieldwork, stn 33, 27°34.8'S, 144°18.6'W, 30 m, dead coral, 19.XI.2002, 1 ♂ (MNHN-Na 15448).

DISTRIBUTION. — Type locality: Maldives. Previously also known from Timor Sea, Loyalty Is; 2-60 m depth. Not previously recorded from French Polynesia.

REMARKS

The specimen has the following rostral formula 2+7/5, the subapical dorsal tooth is tiny.

Genus *Harpiliopsis* Borradaile, 1917

Harpiliopsis depressa (Stimpson, 1860)

Harpilius depressus Stimpson, 1860: 38. — Kemp 1922: 231, figs 69, 70.

Harpiliopsis depressus – Kropp & Birkeland 1981: 629, tab. 5. — Odinetz 1983: 205.

Harpiliopsis depressa – Bruce 1991a: 263. — Chace & Bruce 1993: 82. — Fransen 1994a: 107, figs 59, 61. — Poupin 1998: 14. — Li & Bruce 2006: 636.

MATERIAL EXAMINED. — **Marquesas Is.** Puamau Bay, Hiva Oa, 14.II.1996, coll. J. Poupin, 1 ♂, 2 ♀♀ (1 ovig.) (MNHN-Na 13354). — Puamau Bay, Hiva Oa, 14.II.1996, coll. J. Poupin, 2 ♀♀ (1 ovig.) (MNHN-Na 16032). — Fatu Hiva, 16.II.1996, coll. J. Poupin, 1 ♂, 2 ♀♀ (1 ovig.) (MNHN-Na 13353).
Tuamotu Is. Mururoa, coll. J. Poupin, 1 ♂, 2 ♀♀ (1 ovig.) (MNHN-Na 13406).

HOST. — *Pocillopora* sp. (Cnidaria, Anthozoa, Scleractinia, Pocilloporidae). Previously reported associating with species of *Pocillopora* Lamarck, 1816, *Seriatopora* Lamarck, 1816, *Stylophora* Schweigger, 1819, rarely *Acropora* Oken, 1815, and *Porites* Link, 1807 by Odinetz (1983) and Poupin (1998) from the Marquesas, Tuamotu and Society islands.

DISTRIBUTION. — Type locality: Hawaii. Common and widespread throughout most of the Indo-Pacific region, previously recorded from Egypt, Israel, Saudi Arabia, Sudan, Yemen, Kenya, Zanzibar, Mozambique, Comoro Is, Madagascar, Seychelles, la Réunion, Maldives, Chagos Is, Sri Lanka, Andaman Is, Nicobar Is, Indonesia, Papua New Guinea, South China Sea, Japan, Philippines, Australia (Western Australia, Queensland), Mariana Is, New Caledonia, Loyalty Is, Marshall Is, Ellice Is (Rotuma Island), Fiji Is, Samoa Is, Kiribati, Line Is (Palmyra Island), French Polynesia (Marquesas Is, Society Is, Tuamotu Is), Hawaii, Johnson Atoll; also Galapagos Is, Mexico, Costa Rica, Panama, Colombia and Ecuador; littoral to sublittoral, 0-54 m depth with certainty. Previously reported from Marquesas and Tuamotu Islands by Poupin (1998).

Harpiliopsis spinigera (Ortmann, 1890)

Anchistia spinigera Ortmann, 1890: 511, pl. 36, fig. 23.

Harpiliopsis spinigera – Chace & Bruce 1993: 82. — Poupin 1998: 14. — De Grave 2000: 124. — Li 2000: 64, fig. 67. — Marin *et al.* 2004: 201, fig. 2. — Li & Bruce 2006: 636, fig. 2.

MATERIAL EXAMINED. — **Marquesas Is.** Atuona Bay, Hiva Oa, 14.II.1996, coll. J. Poupin, 1 ♂, 1 ovig. ♀ (MNHN-Na 13355). — Same data, associated with *Pocillopora* spp., 15.II.1996, 2 ♀♀ (1 ovig.) (MNHN-Na 16031).
Tuamotu Is. Mururoa, 2-3 m, X.1995, coll. J. Poupin, 2 ovig. ♀♀, 1 juvenile ♀ (MNHN Na 14819). — Fangataufa, coll. J. Poupin, 4.V.1997, 3 juveniles (2 ♂♂, 1 ♀) (MNHN-Na 13401).

HOST. — *Pocillopora* sp. (Cnidaria, Anthozoa, Scleractinia, Pocilloporidae). Previously reported associating with species of *Pocillopora*, *Stylophora* by Poupin (1998) from the Marquesas and Tuamotu Islands.

DISTRIBUTION. — Type locality: Samoa. Previously also known from Kenya, Zanzibar, Comoro Is, Seychelles, la Réunion, Maldives, Andaman Is, Vietnam, Philippines, Indonesia, Australia (Queensland), New Caledonia, Fiji Is, Marshall Is, French Polynesia (Marquesas Is, Tuamotu Is), and, in the East Pacific region, Panama and Colombia; littoral, 0-20 m depth with certainty. Previously recorded from Marquesas and Tuamotu islands by Poupin (1998).

REMARKS

The Mururoa specimens retained traces of the typical colour pattern when first examined, with red-spotted fingers on the second pereiopods. The adults have a rostral dentition of 8/4, 8/5, with the first tooth articulated and the distal tooth minute. The Marquesas Islands specimens are small and the female has a rostral dentition of 7/3. The male's rostrum is damaged. The Fangataufa specimens have a rostral dentition of 7-8/3-4.

All the specimens have the posterolateral angles of all the abdominal pleura rounded. Kemp (1922: 234) indicated that his *Harpilius depressus* var. *gracilis* (synonymized with *Harpiliopsis depressus* var. *spinigerus* (Ortmann, 1890) by Holthuis (1952b)) differs from typical *Harpilius depressus* Stimpson, 1860 of the same sex in aspects of the antennal scale, second and third pereiopods, and the position of the anterior pair of dorsal telson spines, but "In all other respects the variety closely resembles the typical form." He also stated that "The pleura of the fourth and fifth abdominal somites are acutely pointed infero-posteriorly" (Kemp 1922: 233). In their keys to distinguish the genera of the Pontoniinae, Holthuis (1993: 121) and Bruce (1994: 15) further stated that *Harpiliopsis* has strong, acute posteroventral angles on the pleura of at least the fourth and fifth abdominal segments. In fact, the situation of the posterolateral angles of abdominal pleura, has not been thoroughly investigated. Recently, Marin *et al.* (2004: 203, fig. 3a-c) illustrated (no description) the abdominal somites of an ovigerous female, juvenile and mature male based on *H. spinigera* material from Vietnam. The posteroventral angle of the fourth abdominal somite pleura of the ovigerous female and juvenile is rounded, that of the male has a small acute tooth; the posteroventral angle of the fifth abdominal somite pleura of the ovigerous female, juvenile and the male, as always consists of a small acute tooth or truncate, instead of strong and acute as in the other two congeneric species, *Harpiliopsis beaupresii* (Audouin, 1825) and *H. depressa* Stimpson, 1860. The rounded posterolateral angles of the abdominal pleurae are perhaps a feature distinguishing *Harpiliopsis spinigera* from the other two species of the genus. The specimens examined agree with the previous descriptions and illustrations of *H. spinigera* by the following characters: the carapace has the antennal spine arising only slightly below the orbital angle, on level considerably dorsal to that of the hepatic spine; the third maxilliped has the antepenultimate segment about 6 times longer than its width; the second pereiopod has the dactyl without lateral carina, armed with two teeth on the cutting edge and the fixed finger with three teeth, the palm and merus each about 5-6 times longer than their central width respectively, the ischium without distal spine on the extensor margin, with one distal spine on the flexor margin; the telson has the posterior pair of dorsolateral spines arising about midway between the anterior pair and the posterior margin.

Genus *Izucaris* Okuno, 1999

Izucaris crosnieri n. sp.
(Figs 1-4; 5A)

TYPE MATERIAL. — **Marquesas Is.** Eiao, MUSORSTOM 9, stn CP 1157, 7°59.2'S, 140°44.2'W, 100 m, 23.VIII.1997, ovig. ♀ holotype (cl 3.10 mm) (MNHN-Na 15616). — Stn CP 1157, 7°59.2'S, 140°44.2'W, 100 m, 23.VIII.1997, 1 ♀ paratype (cl 3.41 mm) (MNHN-Na 15617). — Stn CP 1158, 7°58.7'S, 140°43.9'W, 109-110 m, 23.VIII.1997, 2 ♀♀ paratypes (cl 2.54, 2.73 mm) (MNHN-Na 15618).

TYPE LOCALITY. — French Polynesia (Marquesas Is), 100-110 m depth.

ETYMOLOGY. — It is a pleasure to dedicate this species to Alain Crosnier in recognition of his great contribution

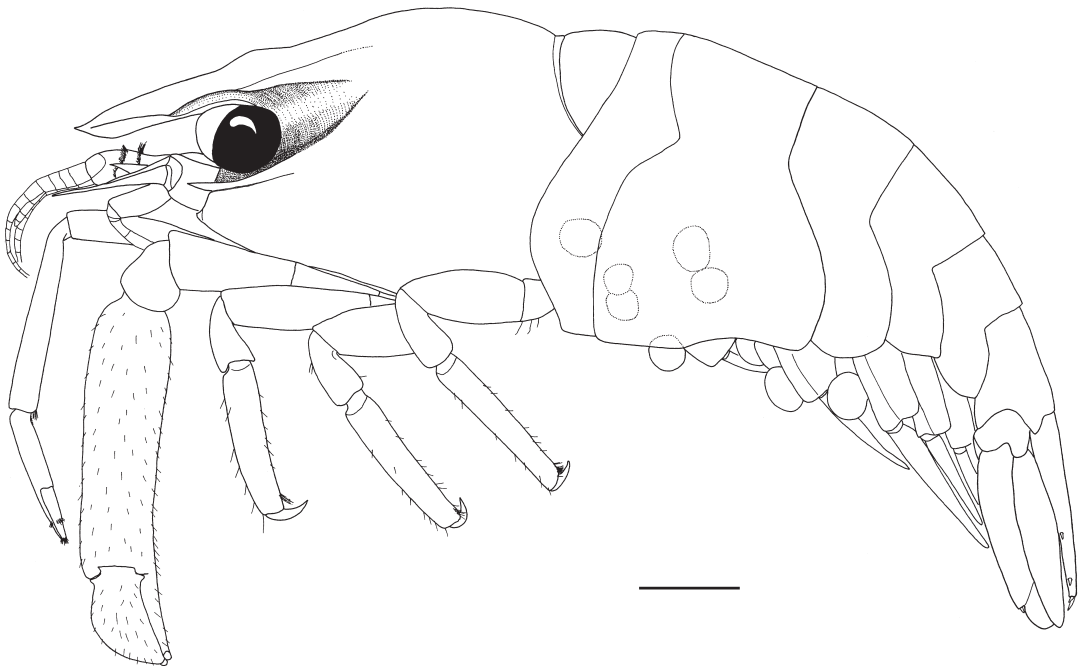

FIG. 1. — *Izucaris crosnieri* n. sp., holotype ovig. ♀ (cl 3.10 mm) (MNHN-Na 15616), body, lateral view. Scale bar: 1 mm.

to the carcinological fauna of the Indo-Pacific region, and his help to my shrimp research.

DISTRIBUTION. — Only known from type locality in Marquesas Islands in French Polynesia; 100-110 m depth.

DESCRIPTION

A small sized pontoniine shrimp of slightly depressed and robust body form.

Carapace glabrous, slightly depressed. Rostrum unarmed, nearly horizontal, slightly overreaching distal end of distal segment of antennular peduncle, 0.57-0.70 times as long as carapace; distal half laterally compressed, dorsal and ventral margins unarmed, dorsal margin slightly sinuous, with base above orbital margin slightly convex and subapically slightly concave, tip acute, anterodorsally pointed; lateral carinae well developed, strongly expanded laterally on proximal half of rostral length, forming supraocular eave extending posteriorly on carapace to about anterior third of carapace length, covering most of eyestalk, eave unarmed, anterior margin oblique, anterolateral angle broadly rounded. Carapace armed only with long slender acute antennal spine, without epigastric, supraorbital, hepatic, or branchiostegal spines; antennal spine with developed antennal carina posteriorly, extending posteriorly on carapace to about anterior fourth of carapace length; area between supraocular eave and antennal carina hollowed, forming deeply concave orbital depression, orbit deeper and broader anteriorly than posteriorly, extending posteriorly to about anterior half of carapace; antennal groove distinct, extending posteriorly from anterior margin of carapace below antennal spine to about anterior fourth of carapace length. Pterygostomian margin produced as distinct pterygostomian lobe curving outward anteriorly, with distinct creased line at base of lobe. Anteroventral angle rounded.

Fourth to eighth thoracic sternites broad, unarmed, posterior margin of fourth thoracic sternite with low transverse carina.

Abdominal somites glabrous, pleura of first 3 somites rounded, pleura of fourth and fifth somites truncate rounded posterolaterally; sixth somite short,

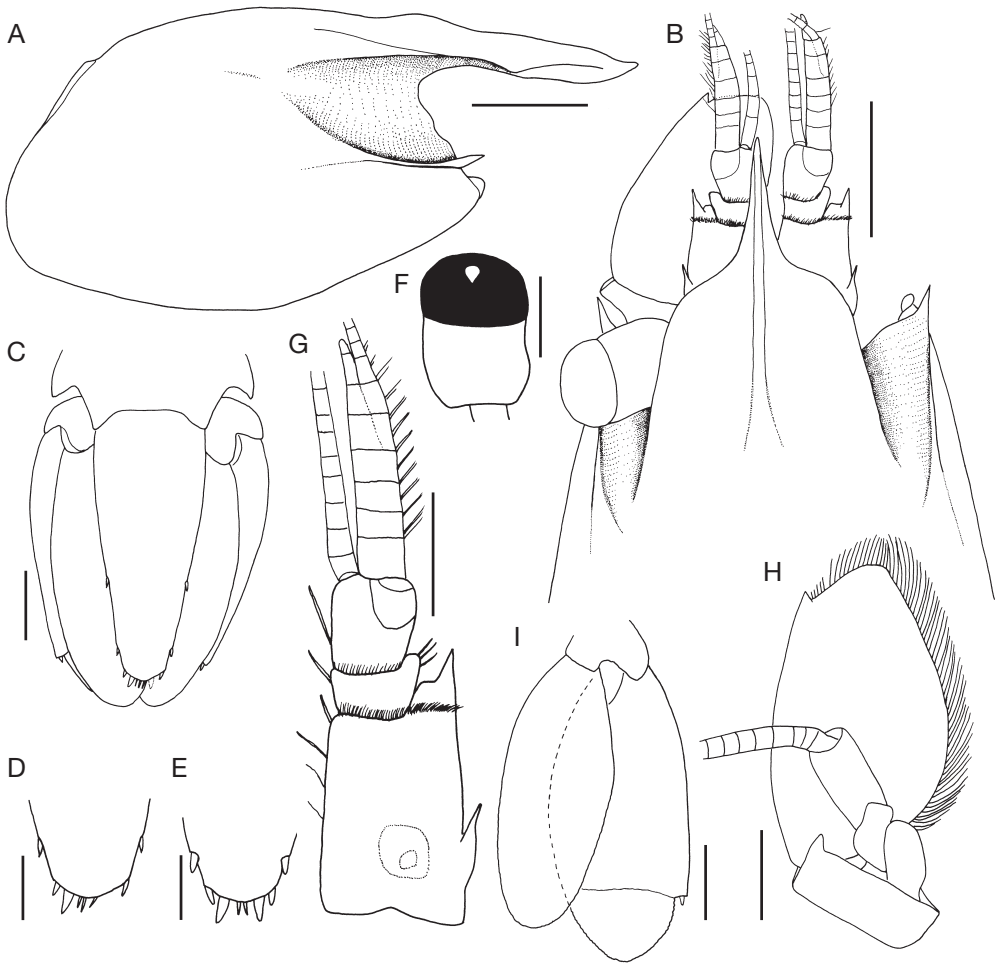

FIG. 2. — *Izucaris crosnieri* n. sp.: **A**-**D**, **F**-**I**, holotype ovig. ♀ (cl 3.10 mm) (MNHN-Na 15616); **E**, paratype ♀ (cl 3.41 mm) (MNHN-Na 15617); **A**, rostrum and carapace, lateral view; **B**, anterior carapace and appendages, dorsal view; **C**, tailfan, dorsal view; **D**, **E**, tip of telson; **F**, right eye, dorsal view; **G**, right antennule, dorsal view; **H**, right antenna, ventral view; **I**, right uropod. Scale bars: A, B, 1 mm; C, F-I, 0.5 mm; D, E, 0.25 mm.

about 0.35 of carapace length, 1.3 times longer than high, 1.4 times as long as fifth, posterolateral and posteroventral angles truncate rounded. Telson about 1.7 times as long as sixth somite, 2.4 times longer than anterior width, anterior margin about 2.7 times wider than posterior margin, with 2 pairs of small dorsolateral spines marginally at 0.6 and 0.9 of telson length; posterior margin rounded, with 3 pairs of terminal spines (holotype with 3 submedian and 1 intermediate spines), lateral pair is similar to dorsolateral spines, intermediate pair slightly longer and stouter than others, submedian pair very slender, not setose.

Eye well developed, slightly compressed, cornea hemispherical, obliquely jointed with stalk, diameter about 0.2 of carapace length, stalk without anterodorsal tubercle, width subequal to corneal diameter, dorsal length about 0.7 of corneal length.

Antennular peduncle robust, extending to near tip of rostrum. Proximal segment with medial length about 0.25 of carapace length, 1.4 times longer than central width, with slender acute stylocerite

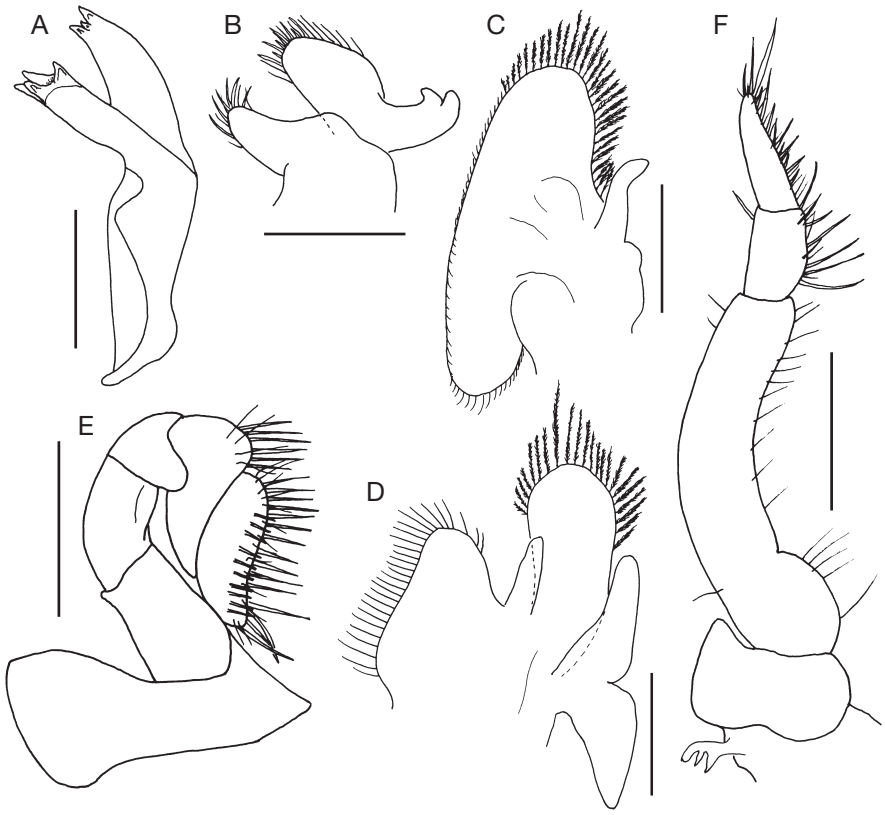

FIG. 3. — *Izucaris crosnieri* n. sp., holotype ovig. ♀ (cl 3.10 mm) (MNHN-Na 15616): **A**, mandible; **B**, maxillula; **C**, maxilla; **D**, first maxilliped; **E**, second maxilliped; **F**, third maxilliped. Scale bars: 0.5 mm.

laterally, extending to near 0.6 of medial length; anterolateral margin broadly produced, non-setose, with strong stout acute anterolateral tooth distinctly exceeding anterior margin of intermediate segment; ventromedial tooth absent; statocyst normally developed. Intermediate segment short, dorsal length about 0.2 of proximal segment length, 0.5 times shorter than distal width, lateral margin expanded, with broad, setose lateral lobe. Distal segment about 0.5 of proximal segment length, 1.1 times longer than distal width; upper flagellum biramous, 6 proximal segments fused, fused portion subequal to proximal segment, shorter free ramus with only 2 segments, with about 12 groups of aesthetascs, longer free ramus slender, filiform, with about 12 segments; lower flagellum slender, filiform, with more than 25 segments.

Antenna with basicerite unarmed ventrolaterally; scaphocerite well developed, broad, far overreaching tip of rostrum, about 0.55 times as long as carapace, 1.7 times longer than maximum width, distal margin strongly produced, rounded, far overreaching distolateral tooth, lateral margin distinctly convex, with stout acute distolateral tooth; carpocerite about 0.4 of scaphocerite length, 2.3 times longer than wide; flagellum well developed, slender, longer than 2.2 times as long as carapace length.

Mouthparts similar to those of *Izucaris masudai* Okuno, 1999. Mandible without palp; molar process normal, with four strong teeth, upper inner tooth low; incisor process truncate distally with three stout acute teeth, central tooth smaller than outer teeth. Maxillula with broad upper lacinia, bearing strong spiniform setae and simple setae marginally; lower

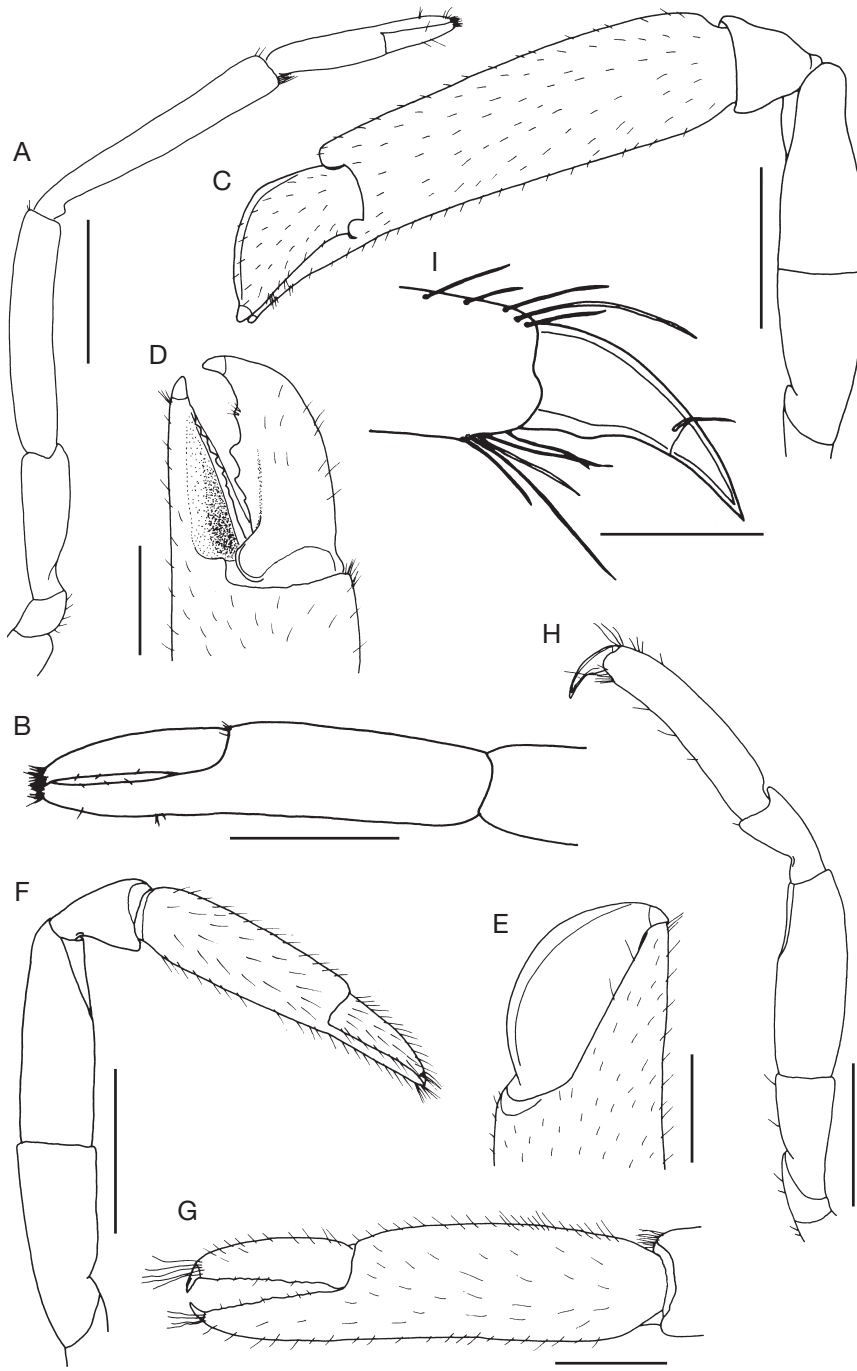

FIG. 4. — *Izucaris crosnieri* n. sp., holotype ovig. ♀ (cl 3.10 mm) (MNHN-Na 15616): **A**, right first pereiopod, lateral view; **B**, same, chela, dorsal view; **C**, major (left) second pereiopod, lateral view; **D**, same, fingers, lateroventral view; **E**, same, medial view; **F**, minor (right) second pereiopod, lateral view; **G**, same, chela, dorsal view; **H**, left third pereiopod, lateral view; **I**, right third pereiopod, dactyl and distal part of propod, lateral view. Scale bars: A, C, F, H, 1.0 mm; B, D, E, G, 0.5 mm; I, 0.25 mm.

lacinia with several strong spiniform setae distally, sparse slender simple setae on posterior margin; palp distinctly bilobed, anterior lobe curved, without seta distally. Maxilla with short, stout, slightly tapered distally, curved medially non-setose palp; endites obsolete; scaphognathite well developed, broad, about three times as long as its central width. First maxilliped with short, stout, non-setose palp, medial margin slightly sinuous; basal endite large, broad, with marginal setae; exopodal flagellum absent, caridean lobe large, oval, with plumose marginal setae; epipod large, bilobed. Second maxilliped without exopodal flagellum; dactylar segment broad with dense serrulate spines and simple setae medially, medial margin slightly concave, not deeply emarginate; propodal segment with spiniform setae and sparse simple setae distomedially; carpal segment with lower angle produced, rounded; epipod large, broad; without podobranch. Third maxilliped without exopod; endopod robust, ischiomerus and basis completely fused, with basal portion convex medially, combined segment about 0.4 of carapace length, 4.7 times longer than central width, with sparse setae along medial margin; penultimate segment about 0.25 of combined segment length, 1.5 times longer than wide, with several spiniform setae medially and 1 distolateral spiniform seta; terminal segment about third of fused segments length, distally tapering, 3.3 times longer than proximal width, with long spiniform setae distally and medially; epipod subrectangular; with small arthrobranch.

Pereiopods robust. First pereiopod, overreaching level of distal end of scaphocerite by chela and most of carpus; chela about 0.44 times as long as carapace, palm slightly depressed, 2.9 times longer than wide, with 5 or 6 transverse rows of short cleaning setae on proximal fifth of ventral margin, fingers about 0.7 of palm length, tips hooked, with sparse simple distal setae, cutting edges nearly straight, entire, dactyl tapering distally, about 4.8 times longer than proximal width; carpus subcylindrical, slightly tapering proximally, about 1.4 times as long as chela, 6.8 times longer than distal width, with a transverse row of distoventral cleaning setae; merus slightly compressed, subuniform, about 1.2 times as long as chela, 5.7 times longer than deep; ischium slightly compressed, about 0.8 of chela length, 3.1 times longer than distal depth; base and coxa without special features.

Second pereiopods strongly dissimilar and unequal. Left major pereiopod large and robust, overreaching carpocerite by chela, overreaching distal end of scaphocerite by fingers and distal half palm; chela large, robust and long, palm subcylindrical, subuniform, about 0.8 times as long as carapace, 3.3 times longer than proximal depth, covered with fine setae; fingers with strongly hooked tips, dactyl broad flattened, curved medially, about 0.4 times as long as palm, 2.0 times longer than broad, dorsolateral margin oblique so that distal half tapers distally to hooked tip, lateral surface with fine setae, cutting edge bearing four truncate teeth, distal second teeth large, proximal second teeth smaller than distal second teeth, proximal and distal teeth low and small; fixed finger tapered distally to hooked tip, proximal expanded, with a deep proximal cavity on cutting margin to fill the base of dactyl, cutting edge with about seven small low teeth; carpus cup-like, widening distally, about 0.2 as long as palm, 0.7 times shorter than distal depth; merus slightly compressed, about half of palm length, 2.4 times longer than proximal depth, unarmed; ischium slightly compressed, slightly tapered proximally, about 0.4 of palm length, 2.0 times longer than distal depth; base and coxa without special features. Right minor pereiopod shorter and more slender than major, overreaching distal end of scaphocerite by finger and distal fifth of palm; chela covered by long fine setae, palm slightly compressed, subuniform, about 0.45 times as long as carapace, 2.7 times longer than wide; fingers with acute hooked tips, covered with setae, with long and curved subapical setae, cutting edges nearly straight, with very small acute teeth; carpus cup-like, about 0.4 as long as palm, 1.3 times longer than distal depth; merus slightly compressed, subequal to palm in length, about 3.0 times longer than proximal depth, unarmed; ischium slightly compressed, slightly tapered proximally, about 0.9 of palm length, 2.6 times longer than distal depth; base and coxa without special features.

Ambulatory pereiopods robust. Third pereiopod extending to distal end of scaphocerite; dactyl simple,

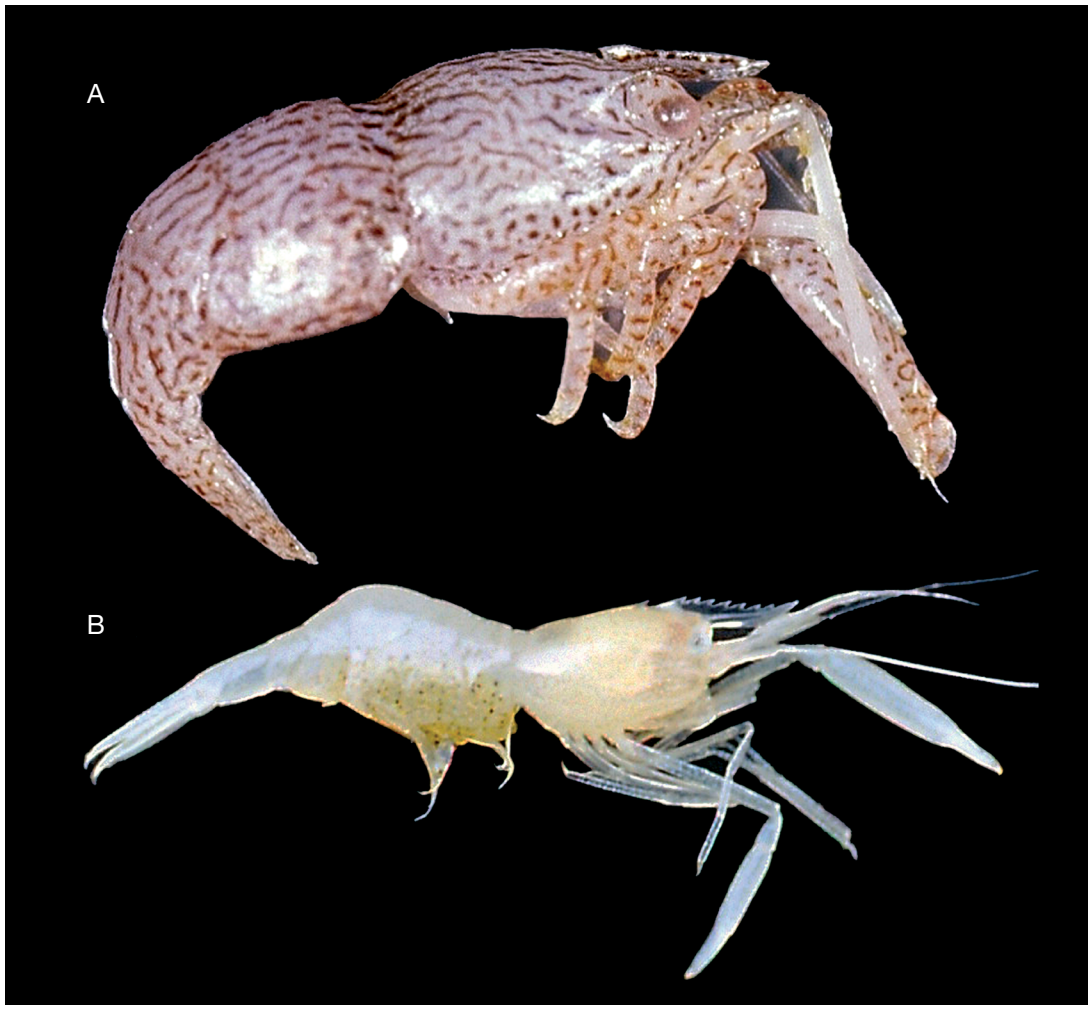

FIG. 5. — **A**, *Izucaris crosnieri* n. sp., paratype ♀ (cl 3.41 mm) (MNHN-Na 15617); **B**, *Periclimenes aleator*, Bruce, 1991, ovig. ♀ (MNHN-Na 15982) (provided by J. Poupin).

hooked, dorsal margin length about third of propod, 2.5 times longer than proximal depth, dorsal margin evenly convex, ventral margin sinuous on proximal half, slightly concave on distal half, unguis distinct; propod slightly compressed, about half of carapace length, 4.7 times longer than proximal depth, with long and curved distoventral and distodorsal setae, without spines; carpus tapered proximally, about 0.4 of propod length, 1.7 times longer than distal depth, distodorsal lobe produced distinctly; merus with distal third depressed, gradually compressed proximally, about 0.9 of propod length, 2.8 times longer than central depth, unarmed; ischium tapered proximally, slightly compressed, about 0.6 of propod length, 2.0 times longer than distal depth; base and coxa normal. Fourth and fifth pereiopods similar to third, fourth pereiopod propod subequal to third, fifth pereiopod propod 1.1 times longer than third, fifth pereiopod exceeding anteroventral angle of carapace.

Uropod distinctly exceeding distal end of telson; protopodite with posterolateral angle short,

rounded; exopod about 0.65 of carapace length, 2.0 times longer than central width, lateral margin feebly convex, with acute movable spine distally, without distal tooth; diaeresis distinct; endopod 0.9 times as long as exopod, 2.4 times longer than central width.

Egg number more than 60, size moderate, maximum length 0.44 mm.

Coloration

Based on the photograph (Fig. 5A) of a paratype (MNHN-Na 15617) provided by J. Poupin.

Shrimp body pink, with long longitudinal brownish stripes on rostrum and dorsal surfaces of carapace and abdomen, and short traverse or oblique brown to brown-yellowish stripes on lateral surfaces of carapace and abdomen, and surfaces of pereiopods.

REMARKS

Izucaris crosnieri n. sp. is the second species of the genus *Izucaris*. It is very similar to the other species of the genus, *I. masudai* but can be easily distinguished from the latter by the major second pereiopod chela, with a strongly broadened and flattened dactylus medially curved; the anterior dorsolateral pair of telson spines situated at about 0.6 of the telson length, distinctly posterior to the midlength of the telson (vs. at midlength in *I. masudai*); the distolateral spine of proximal antennular peduncle segment distinctly exceeding the anterior margin of the intermediate segment (vs. not extending to the margin in *I. masudai*); the cutting edges of the first pereiopod fingers entire (vs. bearing blunt teeth in *I. masudai*). *Izucaris crosnieri* n. sp. also resembles the species of the genus *Pontonides* Borradaile, 1917, from which it can be separated by the long and distally compressed rostrum, and the normal, not deeply emarginate medial margin of the dactylar segment of the second maxilliped.

The peculiar major second pereiopod of *I. crosnieri* n. sp. looks somewhat like that of *Periclimenes platydactylus* n. sp. (see below), but its dactyl is shorter and broader than that of the latter.

The collection position and depth of this new species extend the geographic range of the genus *Izucaris* to French Polynesia, and its bathymetric range to 100-110 m. The only other species of the genus, *Izucaris masudai*, was recorded from the Izu Peninsula, Honshu, Japan, from 20-27 m.

Genus *Jocaste* Holthuis, 1952

Jocaste lucina (Nobili, 1901)

Coralliocaris lucina Nobili, 1901: 5.

Jocaste lucina – Holthuis 1952b: 193-195, fig. 94 (*partim*). — Patton 1966: 278, fig. 3a. — Chace & Bruce 1993: 84. — Poupin 1998: 15. — Li 2000: 70, fig. 71. — De Grave 2000: 126. — Li & Bruce 2006: 639.

MATERIAL EXAMINED. — **Austral Is.** Marotiri Is, BENTHAUS, stn DW 1879, 27°55'S, 143°30.1'W, 52 m, 6.XI.2002, 21 ♂♂ (MNHN-Na 15984).

DISTRIBUTION. — Type locality: Eritrea Previously also known from Egypt, Israel, Sudan, Yemen, Oman, Kenya, Zanzibar, Tanzania, Mozambique, Comoro Is, Madagascar, Seychelles, la Réunion, Maldives, Sri Lanka, Andaman Is, Nicobar Is, Singapore, Vietnam, South China Sea, Indonesia, Papua New Guinea, Australia (Western Australia, Queensland), Coral Sea, Marianas Is, New Caledonia, Loyalty Is, Marshall Is, Fiji Is, Cook Is, Johnson Atoll, and French Polynesia (Society Is, Tuamotu Is); sublittoral, 1-54 m depth with certainty. Not previously recorded from Austral Islands.

Genus *Kemponia* Bruce, 2004

Kemponia elegans (Paulson, 1875)

Anchistia elegans Paulson, 1875: 113, pl. 17, fig. 1.

Periclimenes elegans – Bruce 1983: 884, 898. — Chace & Bruce 1993: 110. — Poupin 1998: 16. — Li 2000: 178, fig. 225. — De Grave 2000: 135.

Kemponia elegans – Bruce 2004b: 14. — Li & Bruce 2006: 643.

MATERIAL EXAMINED. — **Austral Is.** Rapa I., S of Tarakoi islet, BENTHAUS, malacologist fieldwork, stn 5, 27°05.6'S, 144°18.5'W, 8 m, dead coral with algae (stained with some sand and mud), 4.XI.2002, 4 ♂♂, 7 ♀♀ (2 ovig.) (MNHN-Na 15632).

DISTRIBUTION. — Type locality: Red Sea. Previously also known from Egypt, Saudi Arabia, Yemen, Kenya, Zanzibar, Tanzania, Madagascar, Seychelles, Kuweit, Laccadive Is (Minikoi), India, Sri Lanka, Andaman Is, Nicobar Is, Singapore, South China Sea, Ryukyu

Is, Japan, Philippines, Indonesia, Papua New Guinea, Timor Sea (Hibernia reef), Australia (Western Australia, Northern Territory, Queensland), Caroline Is, Solomon Is, New Caledonia, Marshall Is, Fiji Is, French Polynesia (Society Is, Marquesas Is, Tuamotu Is); 0-53 m depth. Not previously recorded from Austral Is.

Kemponia ensifrons (Dana, 1852)

Anchistia ensifrons Dana, 1852: 25.

Periclimenes ensifrons – Nobili 1907: 359. — Chace & Bruce 1993: 111. — Poupin 1998: 16. — Li 2000: 180.

Kemponia ensifrons – Bruce 2004b: 15. — Li & Bruce 2006: 644, figs 4, 5.

MATERIAL EXAMINED. — **Austral Is.** Rapa I., Mei Point, BENTHAUS, malacologist fieldwork, stn 30, 27°38.2'S, 144°18.2'W, 16-20 m, dead coral, above barrier, 16-18.XI.2002, 2 ♀♀ (1 ovig.) (MNHN-Na 15468). — Teruametitoi Point, BENTHAUS, malacologist fieldwork, stn 33, 27°34.8'S, 144°18.6'W, 30 m, dead coral, 19.XI.2002, 1 ovig. ♀ (MNHN-Na 15469).

DISTRIBUTION. — Type locality: Balabac Strait, North Borneo. Previously also reported from Egyptian Red Sea, Zanzibar, Comoro Is, Seychelles, Burma, China, Papua New Guinea, New Caledonia, Marshall Is and French Polynesia (Tuamotu Is); 0-35 m depth. Not reported previously from Austral Is.

REMARKS

The present specimens have the carpus of second pereiopod long, about 1.3 times the merus length, subequal or distinctly longer than the palm, unarmed distally; rostral dentition is 1+6-8/2.

Kemponia grandis (Stimpson, 1860)

Anchistia grandis Stimpson, 1860: 39.

Periclimenes grandis – Borradaile 1898: 382. — Chace & Bruce 1993: 112. — Poupin 1998: 16. — Li 2000: 186, fig. 235; 2004: 69. — Li & Liu 2004: 93, fig. 4.

Kemponia grandis – Bruce 2004b: 16. — Li *et al*. 2004: 530. — Li & Bruce 2006: 644.

MATERIAL EXAMINED. — **Marquesas Is.** Ua Huka, south coast of Hiniaehi Bay, MUSORSTOM 9, malacologists, stn 32, 8°56.10'S, 139°32.70'W, 12-17 m, sand, detritus with algae, coll. Cosel, Tröndlé & Tardy, X.1997, 1 ♂ (MNHN-Na 15472).

Austral Is. Rapa I., Hiri Bay, BENTHAUS, malacologist fieldwork, stn 9, 27°37.3'S, 144°22.2'W, 3-24 m, corals, 6.XI.2002, 1 ovig. ♀ (MNHN-Na 15470). — Vavai, BENTHAUS, malacologist fieldwork, stn 32, 27°35.8'-27°35.0'S, 144°23.0'-144°22.7'W, 15-20 m, corals, 18-23.XI.2002, 1 ♂, 1 ovig. ♀ (MNHN-Na 15466).

DISTRIBUTION. — Type locality: Amami O Shima, Ryukyu Is. Previously also known from Israel, Egypt, Djibouti, Aden, Kenya, Zanzibar, Tanganyika, Mozambique, Comoro Is, Madagascar, Seychelles, Sri Lanka, Burma, Malaya, Singapore, Indonesia, Japan, Australia (Northern Territory, Queensland), Marshall Is, Fiji Is, New Caledonia, Tuvalu, French Polynesia (Tuamotu Is); shallow waters, 0-24 m depth. Not previously recorded from Austral and Marquesas Islands, although it is one of the most widely distributed Indo-West Pacific pontoniine species. The 24 m collection depth of the specimen from Rapa, Hiri Bay represents the deepest bathymetric record with certainty of the species so far.

Kemponia rapanui (Fransen, 1987) n. comb. (Fig. 6)

Periclimenes rapanui Fransen, 1987: 519, figs 13-15. — Li 2000: 230, fig. 305. — Poupin 2003: 21.

MATERIAL EXAMINED. — **Austral Is.** Neilson Reef, BENTHAUS, stn CP 1922, 27°03.7'S, 146°03.9'W, 150-163 m, 11.XI.2002, 1 ovig. ♀ (cl 2.22 mm) (MNHN-Na 15996). — Neilson Reef, BENTHAUS, stn CP 1918, 27°03.4'S, 146°04'W, 130-140 m, 11.XI.2002, 1 ♂ (MNHN-Na 15981).

DISTRIBUTION. — The species has been previously known only from its type locality: Tahai, Easter Island. The present record extends not only the bathymetric range of the species from 30-39 m to 30-163 m, but also the geographic range from the East Pacific to the French Polynesia.

Usually, the species of *Kemponia* are shallow water species. The bathymetric range 130-163 m of the present specimens is very deep in the genus. However, two other species of the genus have also been found at more than 100 m depth. The bathymetric ranges of *K. nilandensis* (Borradaile, 1915) and *K. tenuipes* (Borradaile, 1898) are 117-133 m and 105-160 m respectively. The collection depth 163 m of the present ovigerous female is the deepest record of *Kemponia* up to date.

REMARKS

The specimens are close to the original description of Fransen (1987), except for the following differences: the proximal segment of the left antennular peduncle

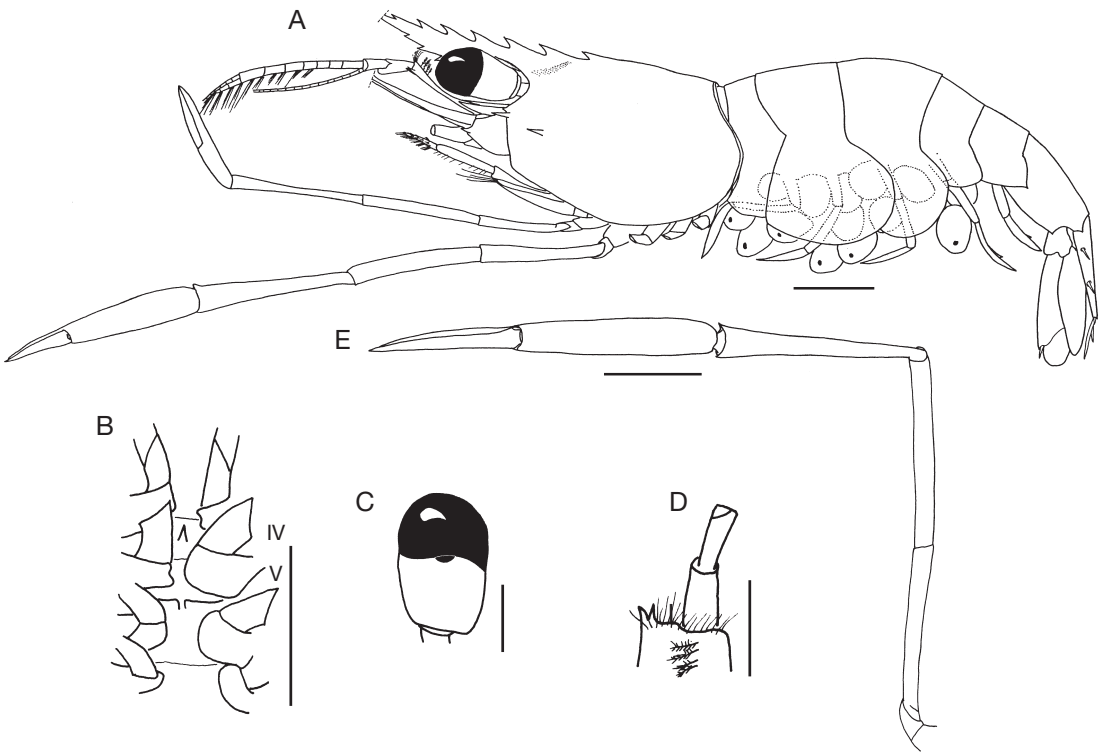

FIG. 6. — *Kemponia rapanui* (Fransen, 1987) n. comb., ovig. ♀ (cl 2.22 mm) (MNHN-Na 15996): **A**, body, lateral view; **B**, thoracic sternites; **C**, eye; **D**, second, third and distal proximal segments of antennular peduncle; **E**, second pereiopod. Scale bars: A, B, E, 1 mm; C, D, 0.5 mm.

of the ovigerous female bears two distolateral teeth; the second pereiopod is longer and more slender than in the types, the palm is 4.54 times longer than wide, vs. 4 times in the types, the carpus is subequal to the palm length, vs. shorter than palm in the type material of *K. rapanui* n. comb. Other minor differences are: the epigastric tooth is situated at 0.26 (vs. 0.3 in type specimens); two pairs of dorsal telson spines are present at 0.30 and 0.60 of telson length (vs. 0.33 and 0.67); the eye has a conspicuous accessory pigment spot (vs. inconspicuous); the antennular peduncle reaches the tip of rostrum (vs. to the 0.8 of the length of rostrum), the proximal segment is 2.03 times longer than maximum width (vs. 3.0); the first pereiopods reach beyond the distal end of the scaphocerite by the chela (vs. not exceeding the scaphocerite), the fingers are 1.32 times the palm length (vs. 1.25); the dactyl of ambulatory pereiopod is 0.17-0.21 as long as the propod (vs. 0.15), the propod is about 22 times longer than the width (vs. 15).

Features which were not mentioned by Fransen (1987) are: sixth abdominal somite 0.56 of carapace length; telson 0.61 of carapace length, dorsal telson spine length 0.09 of telson length; eyes with corneal diameter 0.31 of carapace length; proximal antennular peduncle segment is 0.50 of carapace length; palm of the first pereiopod 0.25 of carapace length; propod of ambulatory pereiopod 0.85 of carapace length; uropod far exceeding telson, exopod 0.62 of carapace length, exceeding tips of intermediate posterior telson spines, 2.64 times longer than maximum width, endopod 0.94 of exopod length, 3.78 times longer than wide; with about 27 eggs, egg length about 0.63 mm.

Periclimenes rapanui has been found previously only from the type locality, Tahai on the west coast of Easter Island (Fransen 1987).

Because the species bears a slender finger-like process on the fourth thoracic sternite, which is one of the key features of the genus *Kemponia*, and as the species fits within the diagnosis of the genus given by Bruce (2004b), *P. rapanui* is herein transferred to *Kemponia*.

Genus *Palaemonella* Dana, 1852

Palaemonella crosnieri Bruce, 1978

Palaemonella crosnieri Bruce, 1978a: 210, figs 2-4. — Li 2000: 101, fig. 108. — Li & Bruce 2006: 656.

MATERIAL EXAMINED. — **Marquesas Is.** Hiva Oa, MUSORSTOM 9, stn DW 1203, 9°52.7'S, 139°02.2'W, 60-61 m, 28.VIII.1997, 1 ♂ (MNHN-Na 15478).

DISTRIBUTION. — Type locality: Glorieuses Is (11°34'S, 47°19'E), from 20 m. Previously also known from Kenya, Western Australia, and Loyalty Is; 2-60 m depth. Not previously recorded from French Polynesia.

REMARKS

The only specimen has a rostral dentition 1+5/2, fewer than Bruce's (1978a) holotype (1+6/2).

Palaemonella lata Kemp, 1922

Palaemonella lata Kemp, 1922: 127-129, figs 3-6. — Odinetz 1983: 207. — Chace & Bruce 1993: 89. — Poupin 1998: 15. — Li 2000: 103, fig. 112.

MATERIAL EXAMINED. — **Society Is.** Tahiti, coll. Odinetz, 1 ♀ (MNHN-Na 6622).

DISTRIBUTION. — Type locality: Port Blair, Andaman Is. Previously reported also from Zanzibar, la Réunion, Indonesia, Hawaii, and French Polynesia (Society Is); littoral. Previously recorded from the Society Islands by Odinetz (1983) and Poupin (1998).

REMARKS

The only specimen examined (cl 3.58 mm) has a rostral dentition of 3+5/3. There is no trace of any supraorbital ridge or tubercle, but a postorbital ridge is distinct. The second pereiopods are subequal and similar, the carpus with upper and lower distomedial teeth and the merus without a lateral distoventral tooth. The third ambulatory pereiopod has the dactyl relatively long and slender in comparison with the type specimen described by Kemp (1922), about 0.3 times the propod length, opposed to 0.26 in the type, and about 6.0 times longer than its proximal depth, instead of about 4.0 times in the type.

Palaemonella spinulata Yokoya, 1936

Palaemonella spinulata Yokoya, 1936: 135, fig. 4. — Li 2000: 106, fig. 116. — Li & Bruce 2006: 668.

MATERIAL EXAMINED. — **Austral Is.** Rapa I., Rarapai islet, BENTHAUS, malacologist fieldwork, stn 4, 27°34.3'S, 144°22.1'W, 18 m, stones with brown algae, 4.XI.2002, 1 ovig. ♀ (MNHN-Na 15504).

DISTRIBUTION. — Type locality: Misaki, Japan. Otherwise known from la Réunion, Australia (Northern Territory, Queensland), New Caledonia, and Loyalty Is; littoral, 15-30 m depth with certainty. Not previously recorded from French Polynesia.

Palaemonella tenuipes Dana, 1852

Palaemonella tenuipes Dana, 1852: 25. — Naim 1980: annex 1, tab. 3. — Odinetz 1983: 207. — Odinetz-Collart & Richer de Forges 1985: 201. — Chace & Bruce 1993: 87, 89. — Poupin 1998: 15. — Li 2000: 107, 108, fig. 117. — Bruce 2003: 222.

MATERIAL EXAMINED. — **Austral Is**. Rapa I., Hiri Bay, BENTHAUS, malacologist fieldwork, stn 9, 27°37.3'S, 144°22.2'W, 3-24 m, coral, 6.XI.2002, 1 ♂ (MNHN-Na 15513). — Teruametitoi Point, BENTHAUS, malacologist fieldwork, stn 33, 27°34.8'S, 144°18.6'W, 30 m, dead coral, 19.XI.2002, 1 ♀ (MNHN-Na 15514).

DISTRIBUTION. — Type locality: Sulu Sea. Previously also known from Red Sea, Sudan, Eritrea, Djibouti, Madagascar, Seychelles, la Réunion, Maldives, Chagos Is, Malaya, South China Sea, Japan, Philippines, Indonesia, Western Australia, Marshall Is, Fiji Is, Tuvalu, French Polynesia (Society Is, Tuamotu Is), Palmyra and Wake Is, and Johnson Atoll; littoral, 0-30 m depth. Not previously recorded from the Austral Is.

REMARKS

Specimen from Rapa, Hiri Bay lacks both second pereiopods, whilst specimen from Teruametitoi Point lacks all the ambulatory pereiopods, as well as the second pair, but a separated second pereiopod is preserved in the tube, which can confidently be assigned to this species.

Genus *Paranchistus* Holthuis, 1952

Paranchistus pycnodontae Bruce, 1978

Paranchistus pycnodontae Bruce, 1978b: 233, figs 1-5. — De Grave 1999: 138, fig. 6, pl. 2b-g. — Li 2000: 112, fig. 122.

Paranchistus serenei Bruce, 1983: 890, figs 7h, i; 9. — Chace & Bruce 1993: 89. — Fransen 1994b: 107, fig. 2e, 112, pl. 2: fig. 4. — Poupin 1998: 15. — Li 2000: 112, fig. 123.

MATERIAL EXAMINED. — **Tuamotu Is.** Fangataufa, 10 m, coll J. Poupin, II.1996, 1 ♂, 2 ovig. ♀♀ (MNHN-Na 13352).

HOST. — *Pinctata margaritifera* (Linnaeus, 1758) (Mollusca, Bivalvia, Pterioida, Pteriidae). Not previously reported associating with species of *Pinctata* Röding, 1798.

DISTRIBUTION. — Type locality: Heron Is. Previously also known from Seram and Ambon Is, Indonesia, Papua New Guinea, French Polynesia (Tuamotu Is); littoral to 10 m depth with certainty of present record. The species was listed from Tuamotu Islands previously by Poupin (1998), based on the same specimens as the present material.

Genus *Periclimenaeus* Borradaile, 1915

Periclimenaeus hecate (Nobili, 1904)

Coralliocaris hecate Nobili, 1904: 232.

Periclimenaeus hecate – Balss 1921: 14. — Bruce 1974b: 1574, figs 11, 12, 13E; 1976: 22, figs 8-11. — Li 2000: 124, fig. 143.

MATERIAL EXAMINED. — **Society Is.** Moorea, stn 5, coll. Monniot, 15.V.19XX (year unknown, maybe before 1995), 1 ovig. ♀ (MNHN Na 8232).

HOST. — *Diplosoma* sp. (Ascidiacea, Aplousobranchia, Didemnidae). Previously reported associating with species of *Diplosoma* Macdonald, 1859 by Bruce (1976) from Kenya.

DISTRIBUTION. — Type locality: Djibouti. Previously also recorded from Red Sea, coasts of Kenya, Comoro Is, Seychelles, la Réunion, Maldives, Vietnam, Nansha Is, Indonesia, Australia (Western Australia, Queesland); shallow waters. Not previously reported from French Polynesia.

REMARKS
The specimen was checked and identified by Dr Sandy Bruce firstly.

Periclimenaeus orbitocarinatus Fransen, 2006

Periclimenaeus orbitocarinatus Fransen, 2006: 732-737, figs 13-15.

MATERIAL EXAMINED. — **Society Is.** Tahiti, Moorea, barrier reef of Tiahura, 17°9'S, 149°5'W, among *Halimeda opuntia* (L.) J.V.Lamour. (green alga, Cadiaceae, Chlorophyta), inner side of lagoon, 1978, collected and donated by O. Naim, 1 juvenile (cl 0.90 mm) (RMNH D 51737).

DISTRIBUTION. — Type locality: Loyalty Is. Previously also recorded from Madagascar and Manado, Indonesia; shallow water. Not previously recorded from French Polynesia.

REMARKS
The specimen fits the original description of Fransen (2006). The juvenile specimen has two dorsal rostral teeth.

Genus *Periclimenes* Costa, 1844

Periclimenes aleator Bruce, 1991
(Fig. 5B)

Periclimenes aleator Bruce, 1991b: 315-322, figs 10-14. — Li 2000: 152, fig. 185. — Li & Bruce 2006: 673, fig. 14.

MATERIAL EXAMINED. — **Marquesas Is.** Nuku Hiva, MUSORSTOM 9, stn CP 1300, 8°50'S, 140°17'W, 416-430 m, 9.IX.1997, 2 ♂♂, 9 ovig. ♀♀ (MNHN-Na 15530). — Eiao, MUSORSTOM 9, stn CP 1270, 7°56'S, 140°43'W, 497-508 m, 4.IX.1997, 3 ovig. ♀♀ (MNHN-Na 15531).
Austral Is. Rurutu, Lotus Bank, BENTHAUS, stn CP 1989, 22°36.2'S, 151°00'W, 456 m, 22.XI.2002, 1 ovig. ♀ (MNHN-Na 15982). — Stn CP 2009, 22°32'S, 151°19.8'W, 320-450 m, 24.XI.2002, 1 ovig. ♀ (MNHN-Na 15985).

HOST. — Specimen of Rurutu with *Aspidodiadema* sp. (Echinodermata, Echinoidea, Aulodonta, Diadematidae). Not previously reported associating with Echinodermata.

COLORATION. — The body is white, with a transparent rostrum (based on a photograph by J. Poupin).

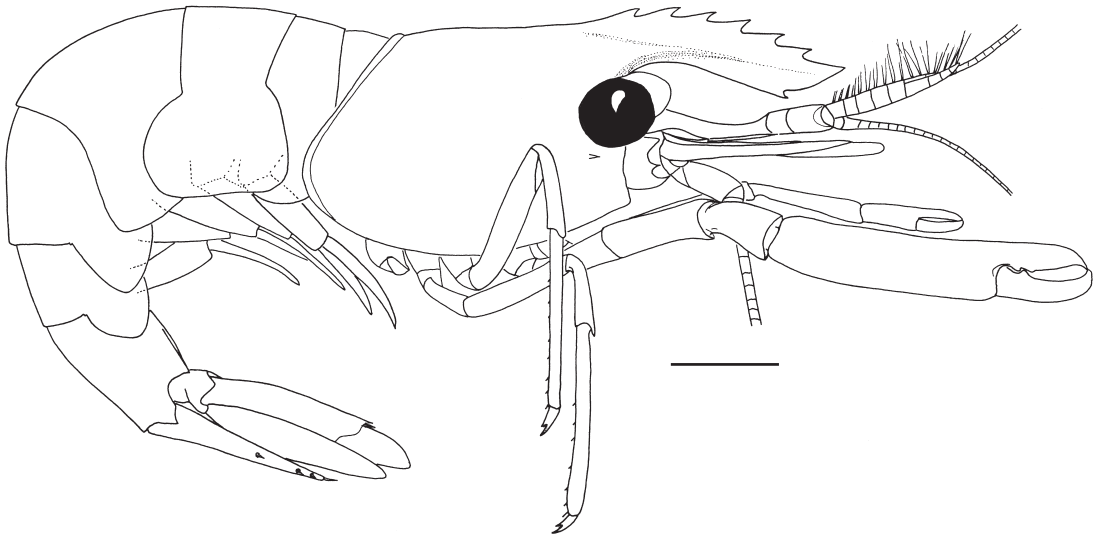

FIG. 7. — *Periclimenes alexanderi* n. sp., holotype, ♂ (cl 2.15 mm) (MNHN-Na 15611), body, lateral view. Scale bar: 1 mm.

DISTRIBUTION. — Type locality: Loyalty Is. Previously also known from Indonesia, Solomon Is, Vanuatu, New Caledonia, Fiji Is; 315-610 m depth. Not previously recorded from French Polynesia.

Periclimenes alexanderi n. sp.
(Figs 7-10)

TYPE MATERIAL. — **Marquesas Is.** Nuku Hiva, MUSORSTOM 9, stn CP 1177, 8°45.1'S, 140°15.1'W, 108-112 m, 25.VIII.1997, holotype ♂ (cl 2.15 mm); paratypes, ♂ (cl 1.91 mm), ♀ (cl 1.74 mm) (MNHN-Na 15611).

TYPE LOCALITY. — French Polynesia (Marquesas Is); 108-112 m depth.

ETYMOLOGY. — The specific name is given in honour of Alexander J. Bruce, who has given the biggest contribution to research of Pontoniinae over the past 50 years.

DISTRIBUTION. — Only known from the type locality.

DESCRIPTION

A small sized pontoniine shrimp of subcylindrical and robust body form.

Carapace smooth, glabrous. Rostrum well developed, anteroventrad, equal to 0.78-0.87 carapace length, reaching to near distal end of third segment of antennular peduncle, deep, extending distinctly anteroventrally, distally acute, up-curved; dorsal margin convex, with 6 or 8 acute teeth, posteriormost tooth just over or slightly posterior to orbital margin; lateral carina conspicuous, markedly thickened; ventral carina distinct, ventral margin slightly concave to straight in about proximal 0.80 of rostral length, strongly upcurved in distal 0.20 so that distal margin is distinctly convex, with single small acute tooth at 0.80 of rostrum length, dorsal interdental spaces setose, ventral margin of carina setose proximally to tooth. Supraorbital and epigastric spines absent, obscure epigastric tubercle present; orbit developed; inferior orbital angle distinctly produced, blunt, broad; antennal spine small, slender, somewhat submarginal, extending to tip of inferior orbital angle; hepatic spine small, slender, similar to antennal, at distinct lower level to antennal spine, slightly posterior to level of first dorsal rostral tooth; anterolateral angle of carapace not produced, bluntly angular.

Abdominal segments smooth, glabrous; third segment not posterodorsally produced; fifth segment 0.50-0.62 of sixth segment length, sixth segment 0.56-0.61 of carapace length, 1.50-1.70 times longer than deep, with posterolateral angle acute, posteroventral angle stout, less acute; pleura of first 3 segments enlarged, broadly rounded, fourth

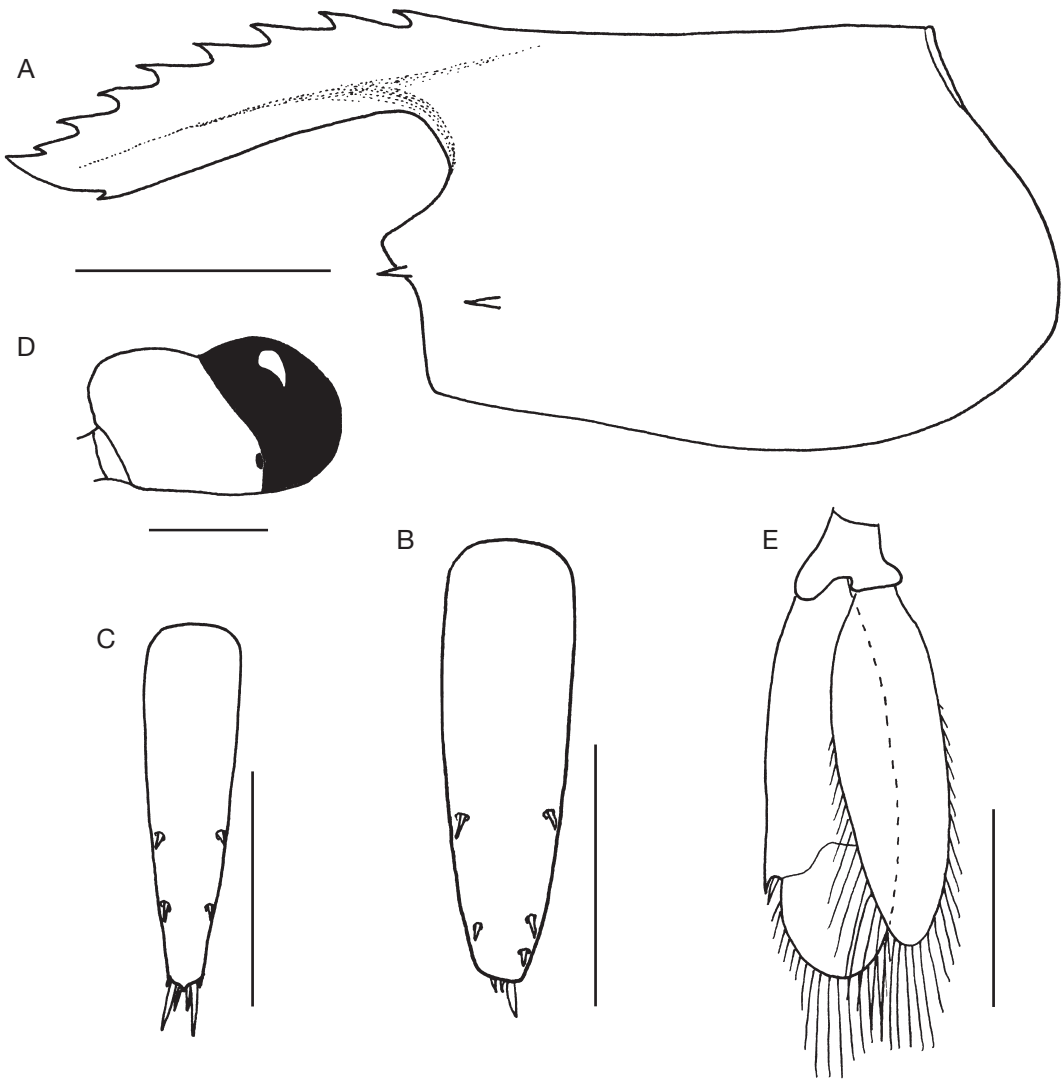

FIG. 8. — *Periclimenes alexanderi* n. sp.: **A**, **C**, paratype ♂ (cl 1.91 mm); **B**, **D**, **E**, holotype, ♂ (cl 2.15 mm) (MNHN-Na 15611); **A**, carapace; **B**, **C**, telson; **D**, eye; **E**, uropod. Scale bars: A-C, E, 1 mm; D, 0.5 mm.

and fifth slightly produced posteriorly, rounded. Telson short and broad, 1.26-1.36 times sixth segment length, 3.43-3.81 times longer than anterior width, tapering posteriorly, lateral margin almost straight, posterior margin about 0.36 of anterior width, with projecting median point; two pairs of dorsal spines present at 0.55-0.62 and 0.74-0.85 of telson length, spines 0.05-0.06 of telson length; posterior margin with 3 pairs of spines, lateral spines small, similar to dorsal spines, intermediate spines well developed, robust, 0.15-0.16 of telson length, submedian spines 0.45-0.50 of intermediate spine length, slender.

Eye with large globular, well pigmented cornea, with distinct accessory pigment spot, oblique, diameter 0.31-0.33 of carapace length; stalk short and

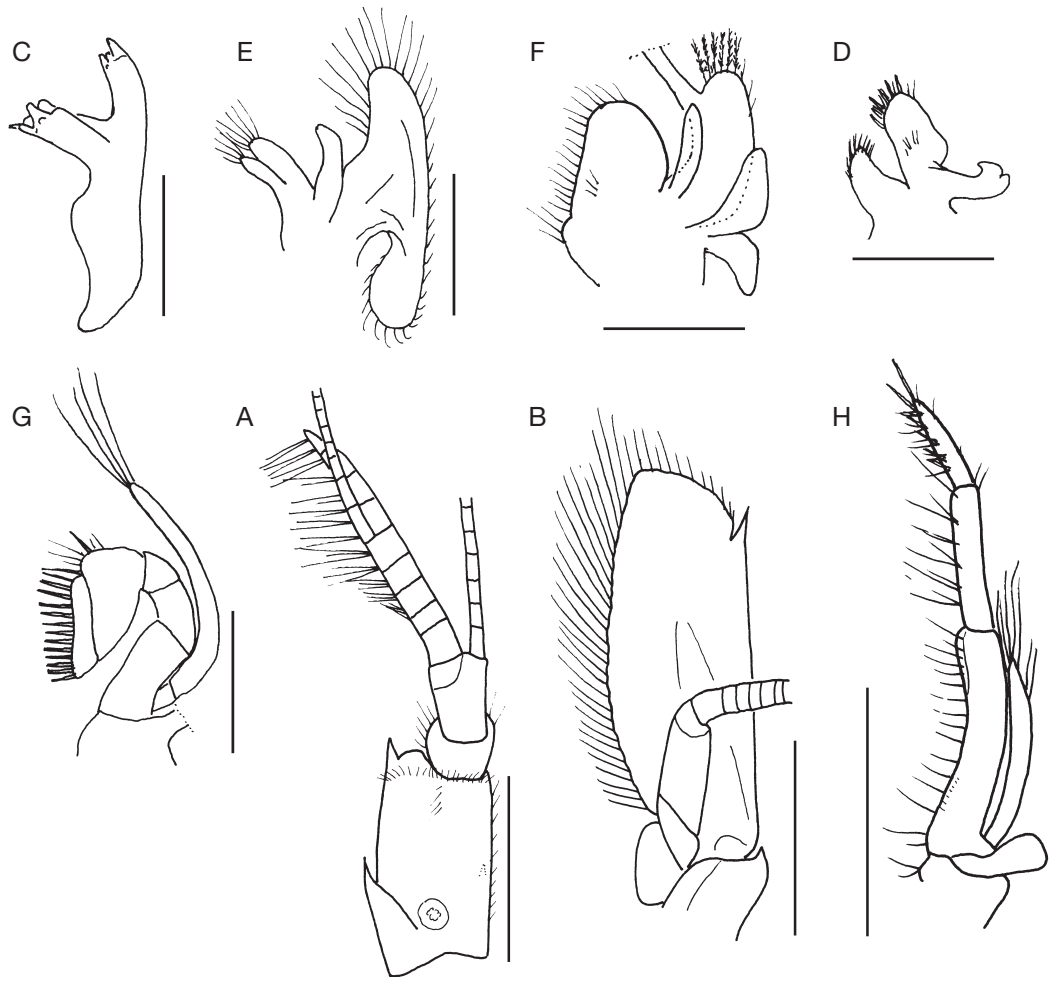

FIG. 9. — *Periclimenes alexanderi* n. sp., holotype, ♂ (cl 2.15 mm) (MNHN-Na 15611): **A**, antennule; **B**, antenna; **C**, mandible; **D**, maxillula; **E**, maxilla; **F**, first maxilliped; **G**, second maxilliped; **H**, third maxilliped. Scale bars: A, B, H, 1 mm; C-G, 0.5 mm.

robust, slightly compressed, swollen anteroproximally and tapering anterodistally, posterior margin length 0.85-0.95 of corneal diameter, 0.91-1.05 as long as maximum width.

Antennular peduncle robust, slightly exceeding tip of rostrum; proximal segment 0.45-0.50 of carapace length, 1.70-1.85 times longer than central width, with slender acute stylocerite laterally, reaching to 0.50-0.60 of medial length; anterolateral margin broadly produced with large lobe, reaching to beyond middle of intermediate peduncular segment, anteriorly setose, with acute distolateral tooth extending far beyond anterolateral margin and near to level of proximal margin of distal peduncular segment; ventral medial border with small acute tooth proximally at 0.36-0.42 of length; statocyst normally developed, with granular statolith; intermediate segment short, dorsal length 0.25-0.34 of proximal segment length, 0.80-0.90 as long as wide, with broad, setose lateral lobe; distal segment 0.26-0.34 of proximal segment length, 1.03-1.16 times longer than wide; upper flagellum biramous, 4 or 5 proximal segments fused, shorter free ramus with 2 to 4 segments only, total length of shorter ramus

0.56-0.68 of postorbital carapace length, with 9-16 groups of aesthetascs, longer ramus with more than 12 free segments; lower flagellum very slender, 1.22-1.26 of postorbital carapace length.

Antennal basicerite with stout, acute lateral tooth; carpocerite short, about 0.23-0.26 of scaphocerite length, slightly compressed, very slightly tapering proximally, 1.65-1.88 of distal width, flagellum more than 4 four times carapace length; scaphocerite extending far beyond rostrum and antennular peduncle, 0.91-1.00 of carapace length, broad, 2.82-2.93 times longer than central width, lateral margin near straight, with stout distolateral tooth, distal margin broadly produced, rounded, exceeding distolateral tooth distinctly.

Epistome unarmed. Fourth thoracic sternite with low transverse ridge with median notch, fifth with similar stronger low transverse ridge; posterior sternites narrow.

Mouthpart generally typical of genus. Mandible normal, molar process normal, with strong blunt teeth; incisor process distally truncate, with 3 acute teeth, central tooth small, outer teeth unequal. Maxillula with feebly bilobed palp; upper lacinia slightly expanded, distal margin with 6-8 simple spines and numerous short setae; lower lacinia short, tapering, blunt, with numerous setae and slender distal spines. Maxilla with short, robust, non-setiferous palp, basal endite deeply bilobed, upper lobe larger, distally rounded with about 5-7 slender simple setae, lower lobe distally oblique, with about 4-6 setae; scaphognathite well developed, about 4.60 times longer than central width, posterior lobe large, anterior lobe narrower. First maxilliped with robust non-setiferous palp, basal endite large, broadly rounded, medial margin moderately setose, coxal endite obsolete; exopod large, triangular, deeply bilobed. Second maxilliped with endopod of normal form, dactylar segment with numerous serrulate spines medially, propodal segment with anteromedial margin strongly spinose; exopod slender, with 4 plumose distal setae; epipod subrectanular, without podobranch. Third maxilliped with endopod moderately robust, extending to about middle of carpocerite, ischiomerus and basis fused, combined segment about 0.43 of carapace length, about 5.94 times longer than central width, subuniform, bowed, compressed, medial margin with numerous slender setae; penultimate segment compressed to subcylindrical from proximal to distal, about 0.65 of proximal segment length, about 4.95 times longer than proximal width, with feebly grouped long slender setae medially; terminal segment subcylindrical, about 0.44 of proximal segment length, with long slender simple terminal spine, tapering distally, with about 6 transverse groups of serrulate spines ventromedially; exopod with slender flagellum with 7 plumose distal setae; coxa with small setose medial process, lateral plate small, rounded; arthrobranch small, with 2 small lamellae only.

First pereiopod moderately slender, extending anteriorly exceeding carpocerite by distal 0.67 to all carpus and chela, extending to or beyond distal margin of scaphocerite lamella by fingers. Chela with palm subcylindrical, slightly compressed, slightly tapering proximally, 0.23-0.25 of carapace length, 1.88-1.98 times longer than distal depth, with 4 or 5 transverse rows of short serrulate cleaning setae proximally; fingers subspatulate, 1.00-1.13 of palm length, tapering distally, dactyl 4.16-4.78 times longer than proximal width, without strongly hooked tip distally, cutting edges situated laterally, entire, laterally covered with several groups of long setae; carpus 1.54-2.06 times of palm length, robust, tapered proximally, 3.43-5.32 times longer than distal width, with several serrulate setae distally; merus 2.09-2.24 of palm length, subuniform, 5.72-6.46 times longer than central width; ischium robust, 1.09-1.19 of palm length, 3.16-3.24 times of distal width, ventral margin with subdistal setose carina; basis with ventral setose carina; coxa with large linguiform process ventrally.

Second pereiopods symmetrical, similar, equal or subequal. In males, major (when subequal) or both second pereiopods (when equal) exceeding carpocerite by chela, carpus and distal fourth to third of merus, exceeding scaphocerite by fingers and distal 1-2 thirds of palm, chela with palm subcylindrical, slightly compressed distally, with sparse tubercles each with single short apical seta, 0.74 to 1.02 of carapace length, 3.07-3.55 times longer than deep; fingers with strongly hooked tips, lateral surfaces with sparse tubercles and long curved setae, dactyl

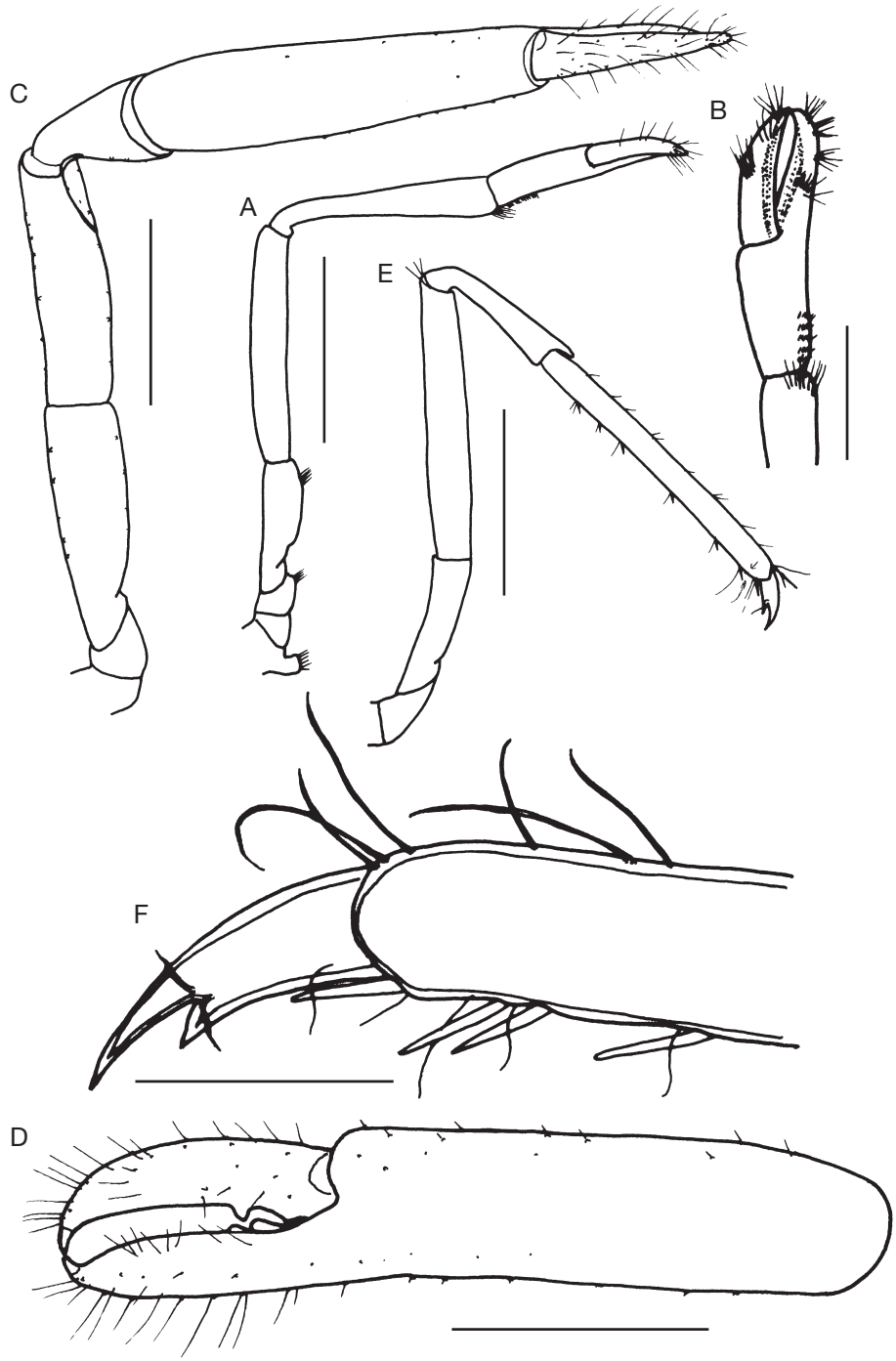

FIG. 10. — *Periclimenes alexanderi* n. sp., holotype, ♂ (cl 2.15 mm) (MNHN-Na 15611): **A**, first pereiopod; **B**, same, chela; **C**, second pereiopod; **D**, same, chela; **E**, third pereiopod; **F**, same, dactyl and distal part of propod. Scale bars: A, C-E, 1 mm; B, 0.5 mm; F, 0.25 mm.

0.51-0.64 of palm length, 3.96-4.20 times longer than proximal depth, distal 0.68 of cutting edge concave, entire, proximal 0.32 with 2 teeth, distal tooth strong, subacute, proximal tooth rounded, fixed finger with distal 0.60 of cutting edge convex, entire, proximal 0.40 with two teeth separated by diastema for distal dactylar tooth; carpus short and stout, cup-like, distally expanded, with very sparse tubercles, 0.27-0.35 of palm length, 1.19-1.27 times longer than distal width; merus with sparse tubercles, 0.64-0.71 of palm length, 3.43-3.58 times longer than central width, compressed proximally, distoventral margin plain, with distoventral lateral margins angulate; ischium 0.65-0.69 of palm length, 3.42-3.87 times longer than distal width, compressed, proximally tapered, with very sparse tubercles. Female with second pereiopods similar to but less strong than those of males, smooth, without tubercles, glabrous except fingers with long setae on lateral surfaces, exceeding carpocerite by chela, exceeding scaphocerite by fingers; palm 0.66 of carapace length.

Ambulatory pereiopods moderately robust. Third pereiopod exceeding scaphocerite by dactyl; dactyl biunguiculate, equal to about 0.25 of propod length; unguis about 0.62 of dorsal corpus length; corpus compressed, about 2.83 times longer than proximal depth, with acute distoventral tooth, 2 distolateral and 1 distomedial setae; propod slightly compressed, about 0.70 of carapace length, 8.52-11.10 times longer than central deep, with 2 pairs of spines distoventrally and 3-7 single ventral spines, and several simple setae; carpus 0.38-0.44 of propod length, unarmed, slightly tapered proximally, 3.42-3.96 times longer than distal width, with well marked distodorsal lobe; merus compressed, 0.89-0.91 of propod length, uniform, 5.50-6.60 times longer than central width, unarmed; ischium compressed, 0.44-0.48 of propod length, slightly tapered proximally, 3.03-3.42 times longer than distal width; basis and coxa without special features. Fourth and fifth pereiopods similar to third, fourth propod 1.03-1.05 times as long as third, fifth 1.04-1.12 times.

Uropod far overreaching telson, protopodite with posterolateral angle rounded; exopod 0.87-0.95 of carapace length, elongate, 3.03-3.37 times longer than wide, lateral margin feebly convex, with strong distolateral tooth and slender acute mobile spine medially, diaeresis distinct; endopod 0.85-0.88 of exopod length, 3.20-3.66 times longer than wide.

REMARKS

Periclimenes alexanderi n. sp. is most closely related to *P. parvispinatus* Bruce, 1990, and shares with the latter the following major morphological characteristics: rostrum with a deep lamina, dorsal teeth almost all situated on the rostrum proper, with one small ventral tooth, eye with globular cornea, first pereiopods without well developed pectinate cutting edges on the fingers, ambulatory pereiopods with simply biunguiculate dactyl. *Periclimenes alexanderi* n. sp. may be readily distinguished from *P. parvispinatus* by the presence of a distinct accessory pigment spot on eye. Other differences are that, in *P. alexanderi* n. sp., the anterior pair of dorsal telson spines are present posterior to the middle of the telson length, hepatic and antennal spines are not tiny, fingers of the first pereiopod are longer than the palm; in *P. parvispinatus*, the anterior pair of dorsal telson spines are present at the middle line of the telson length, posterior margin with a small central projection, hepatic and antennal spines are tiny, fingers of the first pereiopod are shorter than the palm.

Periclimenes josephi n. sp.
(Figs 11-14)

TYPE MATERIAL. — **Austral Is.** Neilson Reef, BENTHAUS, stn CP 1918, 27°03.4'S, 146°04'W, 130-140 m, 11.XI.2002, ovig. ♀ holotype (cl 3.02 mm), ovig. ♀ paratype (cl 2.28 mm) (MNHN-Na 15980). — Stn CP 1920, 27°03.6'S, 146°03.8'W, 120-203 m, 11.XI.2002, 1 ♂ paratype (cl 2.21 mm) (MNHN-Na 15983). — Stn CP 1921, 27°03.7'S, 146°03.8'W, 150-160 m, 11.XI.2002, 1 ♂ paratype (cl 2.15 mm) (MNHN-Na 15986). — Northeastern Bank off Rapa, stn CP 1907, 27°25.4'S, 144°02.6'W, 120-125 m, 9.XI.2002, 1 ♂ paratype (cl 2.68 mm), 4 ovig. ♀♀ paratypes (cl 2.32-3.10 mm) (MNHN-Na 15979).

ETYMOLOGY. — The specific name is given in honour to Joseph Poupin, for his contribution to carcinological studies in French Polynesia.

DISTRIBUTION. — Only known from the localities of the type material in French Polynesia (Austral Is); 120-203 m depth.

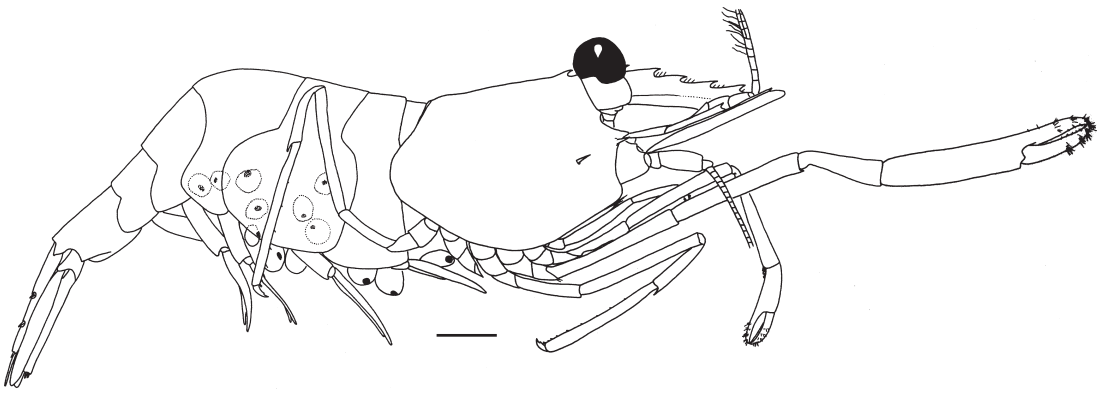

FIG. 11. — *Periclimenes josephi* n. sp., holotype ovig. ♀ (cl 3.02 mm) (MNHN-Na 15980), body, lateral view. Scale bar: 1 mm.

DESCRIPTION

A small sized pontoniine shrimp of subcylindrical body form.

Carapace smooth, glabrous. Rostrum well developed, slightly anteroventrad, bilaterally compressed, extending slightly beyond distal end of antennular peduncle, near to distal margin of scaphocerite (females), or near to distal end of antennular peduncle (males), subequal to carapace length; dorsal margin with 7 or 8 (usually 7) acute teeth, sub-evenly distributed along whole length, posterior 1 or 2 (usually 1) situated on carapace posterior to orbital margin, posteriormost epigastric, slightly smaller than anterior teeth, situated at anterior 0.10-0.22 (average 0.16) of carapace length; lateral carinae developed; ventral margin with 1 acute tooth at about distal 0.4 of rostral length, below and between anterior second and third dorsal teeth; interdental spaces of dorsal teeth and proximal ventral carina with setae. Orbit well developed, inferior orbital angle produced as triangular lobe, tip not acute; supraorbital spine absent; antennal spine slender and acute, sub-marginal, distant below to inferior orbital angle, extending to tip of inferior orbital angle; hepatic spine similar to antennal spine, slender and acute, below level of antennal spine, at, or slightly posterior or anterior to level of epigastric spine, base of hepatic spine with distinct suture; anterolateral angle of carapace not produced, bluntly rounded.

Abdominal segments smooth, glabrous; third segment with tergum normal, without dorsally compressed process; sixth segment about 0.5 of carapace length, 1.7 times length of fifth, subcylindrical, about 1.4 times longer than deep, posterolateral lobe with tip acute, posteroventral angles blunt; pleura of first 3 segments broadly rounded, fourth and fifth posteriorly produced, posterolateral lobes rounded. Telson about 1.5 times of sixth abdominal segment length, 3.2 times longer than anterior width, with 2 pairs of small dorsolateral spines at about 0.48 and 0.71 of telson length, spines about 0.06 of telson length; posterior margin posteriorly produced, with median point, with 3 pairs of posterior spines, lateral spines small, similar to dorsal spines, intermediate spines long, robust, about 0.26 of telson length, submedian spines extending to about proximal 0.42 of intermediate spine length.

Eye well developed, with globular cornea, diameter of cornea 0.3 of posterior orbital carapace length, distinctly stouter than stalk, with distinct accessory pigment spot; stalk short, about 0.75 of corneal diameter, subequal to width, without tubercle.

Antennular peduncle with proximal segment depressed, medial length about 0.45 times as long as carapace, 1.8 times longer than its central width, lateral margin feebly convex, with long strong acute distolateral tooth, overreaching level of produced anterolateral margin, near to distal margin of intermediate segment, medial margin straight, with small ventromedial tooth at about 0.4 of medial length of proximal segment; stylocerite acute, reaching to about 0.5 of proximal segment length; intermediate

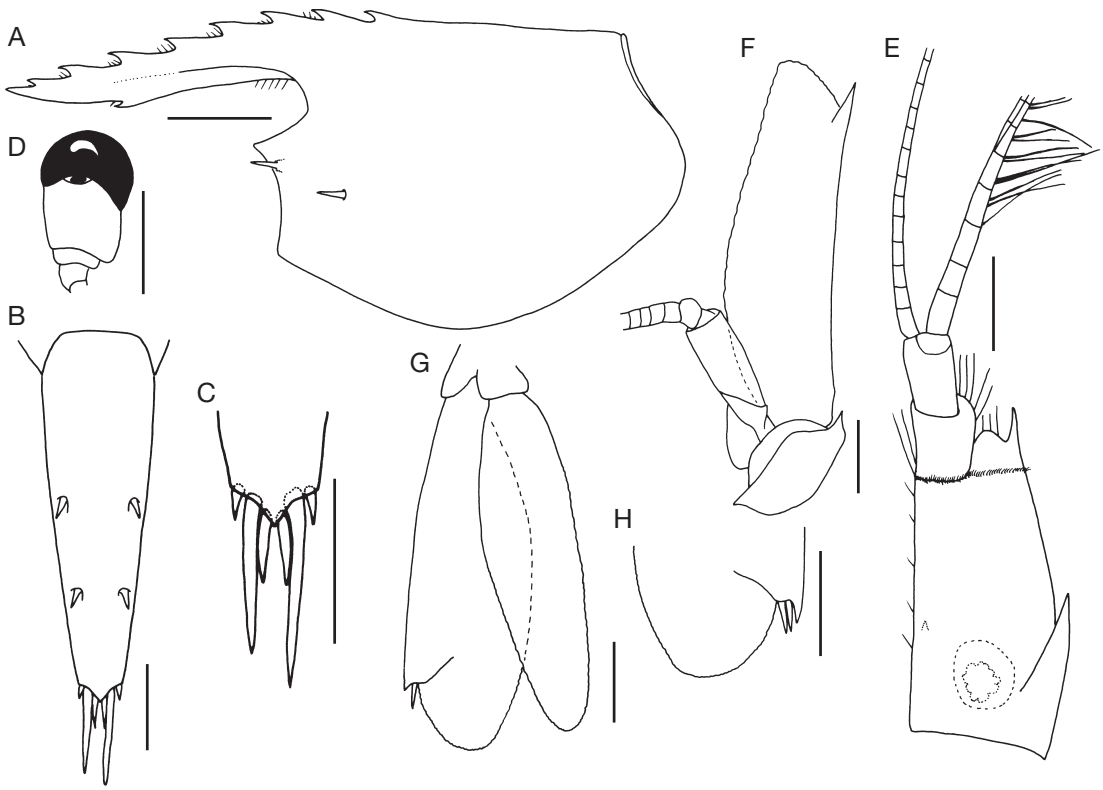

Fig. 12. — *Periclimenes josephi* n. sp., holotype ovig. ♀ (cl 3.02 mm) (MNHN-Na 15980): **A**, rostrum and carapace; **B**, telson; **C**, tip of telson; **D**, left eye, dorsal view; **E**, right antennule, dorsal view; **F**, left antenna, ventral view; **G**, left uropod; **H**, distal exopod of right uropod. Scale bars: A, D, 1 mm; B, C, E-H, 0.5 mm.

segment 0.3 of proximal segment length, 1.1 times of maximum width, lateral margin expanded laterally, setose; distal segment cylindrical, subequal to intermediate segment, about 1.7 times longer than wide; upper flagellum biramous, with four or five proximal segments fused, fused portion about 0.34 of carapace length, shorter free ramus with 3 segments, with 7 groups of aesthetascs; longer ramus slender, filiform; lower flagellum slender, filiform.

Antennal basicerite robust, with acute lateral tooth; scaphocerite well developed, exceeding tip of rostrum, about 0.8 times as long as carapace, 3.3 times longer than wide, distal margin strongly produced, rounded, overreaching distolateral tooth, lateral margin feebly concave, with strong acute distolateral tooth; carpocerite about 0.37 of scaphocerite length, 3.0 times longer than wide; flagellum well developed, slender, about 5.0 times of carapace length.

Epistome unarmed. Fourth and fifth thoracic sternites each with posterior transverse carina with median notch; posterior sternites unarmed.

Mouthparts typical of the genus. Mandible without palp; molar process normal, with 4 strong blunt teeth, upper inner tooth low, plain, lower and inner margins of molar process with short and fine setae; incisor process obliquely truncate distally with three stout acute teeth, central tooth smaller than outer teeth. Maxillula with palp twisted, simple, not bilobed; upper lacinia slightly expanded, distal margin with simple spines and numerous short setae; lower lacinia up-curved, with numerous setae and slender distal spines laterally. Maxilla with short simple non-setose palp; basal endite deeply bilobed, upper

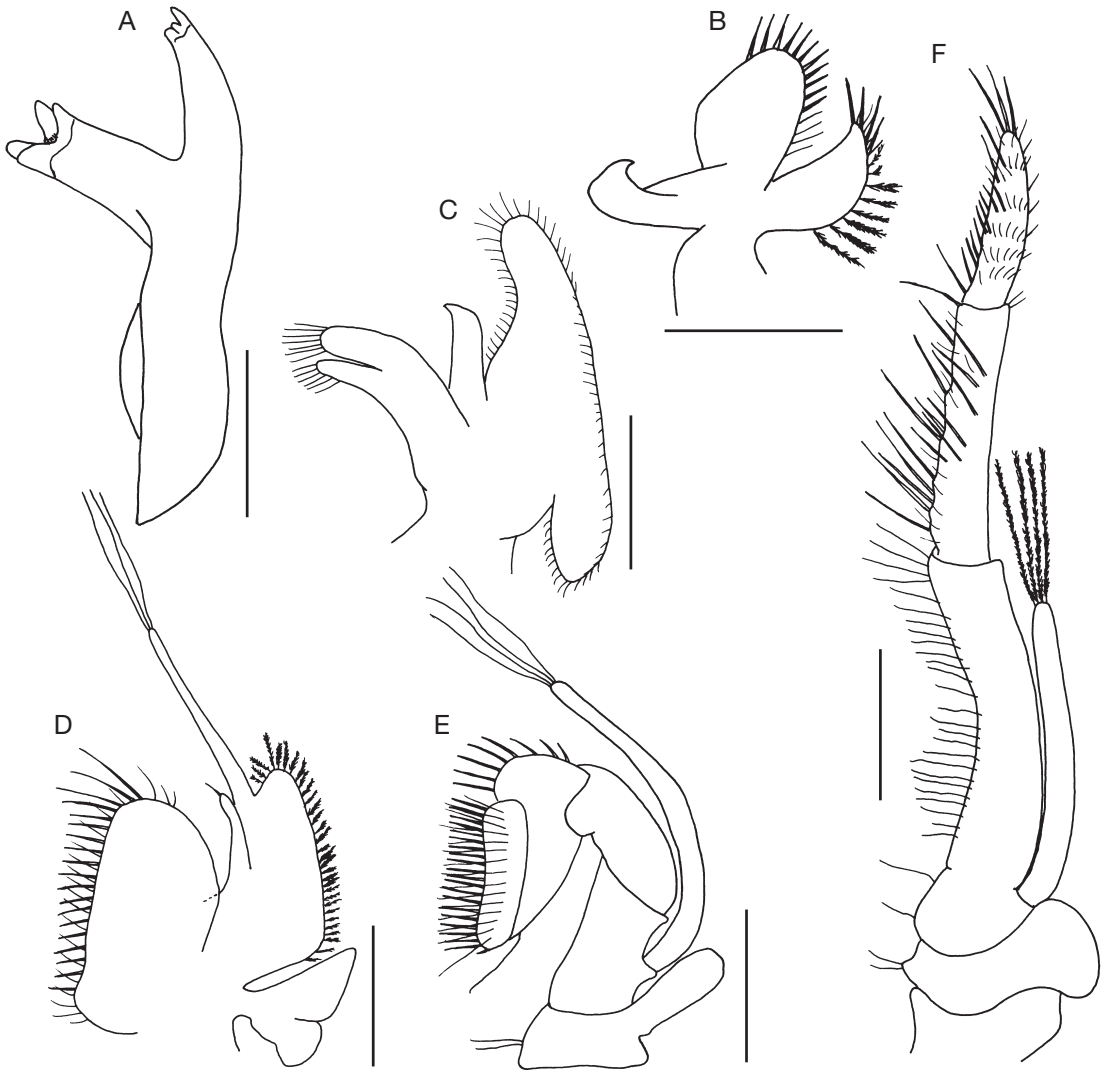

FIG. 13. — *Periclimenes josephi* n. sp., holotype ovig. ♀ (cl 3.02 mm) (MNHN-Na 15980): **A**, mandible; **B**, maxillula; **C**, maxilla; **D**, first maxilliped; **E**, second maxilliped; **F**, third maxilliped. Scale bars: 0.5 mm.

lobe stouter than lower, with simple setae distally; scaphognathite well developed. First maxilliped with palp slender, with a distal spiniform seta; basal endite large, broadly rounded, medial margin with spiniform and simple setae; coxal endite obsolete; exopod large, well developed, caridean lobe large, broad, flagellum slender with 3 plumose distal setae; epipod large, triangular, deeply bilobed. Second maxilliped with normal endopod, dactylar segment about 3.8 times longer than broad, with numerous serrulate spines medially; propodal segment broad, distal margin with numerous long finely serrulate spiniform setae; exopod with 4 long setae distally; epipod simple, long, without podobranch. Third maxilliped with endopod extending to end of carpocerite, ischiomerus and basis fused, combined segment compressed, about 0.4 times of carapace length, 6.5 times longer than central width, setose

medially; penultimate segment compressed, about 0.6 of combined segment length, 4.3 times longer than proximal width, with long spiniform setae medially; terminal segment about 0.45 of combined segment length, distally tapering, 4.6 times longer than proximal width, with long spiniform and short simple setae along entire length; exopod slender, about 0.7 of combined segment length, extending to 0.85 of combined segment length, with 4 setae distally; coxa with oval lateral plate; without arthrobranch.

Pereiopods slender. First pereiopods exceeding carpocerite by chela and carpus, exceeding distal margin of scaphocerite by chela and distal fourth of carpus; palm slightly compressed, about 0.26 times of carapace length, 2.2 times as long as maximum depth, ventral margin with 4 transverse rows of short cleaning setae on proximal 0.3 of length; finger slightly shorter than palm, strongly spatulate, cutting edges sharp, proximal half entire, distal half and tips with pectinate short setae, tips rounded; outer surfaces surrounded by clusters curved setae, carpus elongate, slightly swollen distally, about 2.6 times of palm length, 7.4 times longer than distal width, with a row of serrulate cleaning setae distoventrally corresponding those on palm; merus about 2.4 times of palm length, 7.4 times longer than wide; ischium about 1.1 of palm length, 3.2 times longer than wide, with several long setae medially; basis and coxa with medial processes, tips with setae.

Second pereiopods subequal and similar, slender, smooth, glabrous, exceeding carpocerite by chela, carpus and distal half of merus, exceeding distal margin of scaphocerite by chela and almost all carpus; palm subcylindrical, slightly compressed, subuniform, about 0.8-1.0 times of carapace length, 4.6 times longer than deep; fingers about half of palm length, tapering distally, with strongly hooked tips, cutting edges sharp, proximal 0.3 with 1 very small, low tooth on dactyl and 1-3 similar teeth on fixed finger, distal 0.7 of cutting edges entire, outer surface of fingers surrounded with long curved setae; carpus about 0.6 times of palm length, distinctly tapering distally, about 3.2 times of distal width, unarmed; merus subcylindrical, subuniform, about 0.9 of palm length, 6.2 of the central width, with a stout distoventral tooth laterally; ischium subequal to merus, very slightly tapering proximally, about 6.7 times longer than distal width; basis and coxa normal.

Third pereiopod exceeding carpocerite by dactyl, propod and distal half of carpus, exceeding distal margin of scaphocerite by dactyl and distal half of propod; dactyl short and stout, compressed, about 0.13 of propod length, unguis distinct, short and stout, about 0.4 of corpus length, corpus about 2.4 times longer than proximal depth, ventral margin nearly straight, distal accessory tooth minute but distinct; propod slightly compressed, subuniform, about 0.8 of carapace length, 12.0 times longer than deep, with pair of long and slender simple distoventral spines, spines about 0.04 of propod length, 0.35 of dactyl corpus length, ventral margin of propod with about 8 single spines similar to distoventral spine along entire length of propod, distal 4 spines more closely distributed than proximal spines, subequal to distoventral spines in length, proximal spines becoming gradually shorter proximally, distodorsal margin with several long setae, distolateral margin with short setae, distal fourth of ventral margin with dense fine woolly setae, other surfaces of propod with sparse short setae; carpus about half of propod length, slightly tapering proximally, 5.3 times longer than distal width, distodorsal margin with produced lobe; merus subcylindrical, subuniform, slightly shorter than propod, 9.2 times longer than central depth, distoventral margin with short stout tooth laterally, medial side unarmed; ischium about half of propod length, 4.5 times longer than distal width, slightly tapered proximally; basis and coxa without special features. Fourth and fifth pereiopods similar to third, fourth propod slightly longer than third, fifth propod 1.1 times as long as third; fifth exceeds carpocerite by dactyl and distal 0.6 of propod.

Uropod distinctly exceeding telson, extending near to tip of median posterior spines of telson; protopodite with posterolateral angle rounded; exopod about 0.7 times as long as carapace length, 2.9 times longer than central width, lateral border nearly straight, with slender and acute mobile spine medial to distal tooth (holotype with 2 mobile spines on right exopod), diaeresis indistinct; endopod narrow, slightly shorter than exopod, about 3.7 times longer than wide.

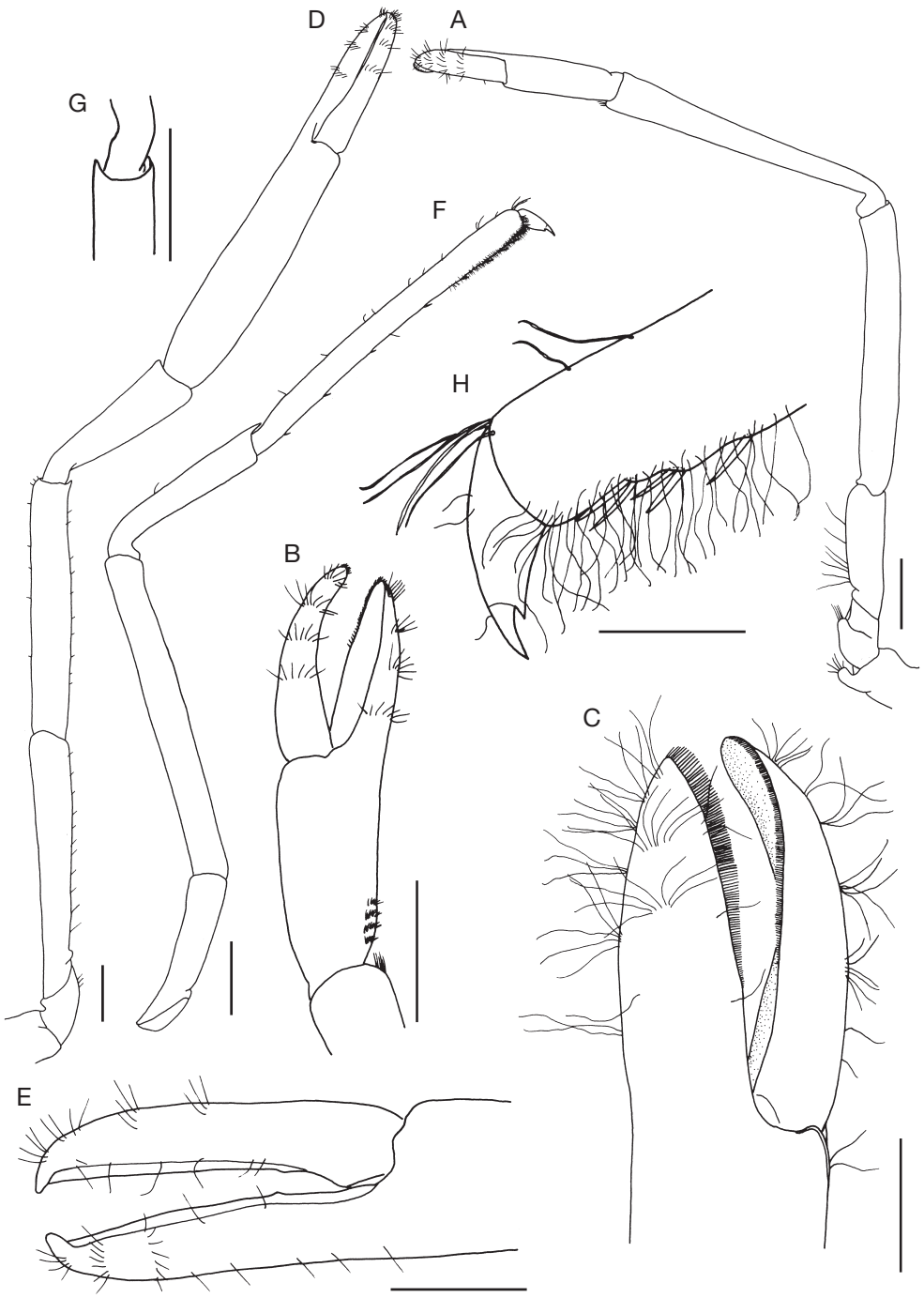

FIG. 14. — *Periclimenes josephi* n. sp., holotype ovig. ♀ (cl 3.02 mm) (MNHN-Na 15980): **A**, left first pereiopod; **B**, same, chela; **C**, right first pereiopod, fingers; **D**, right second pereiopod; **E**, same, fingers; **F**, left third pereiopod, medial view; **G**, same, distal merus, lateral view; **H**, same, dactyl and distal propod. Scale bars: A, B, D-G, 0.5 mm; C, H, 0.25 mm.

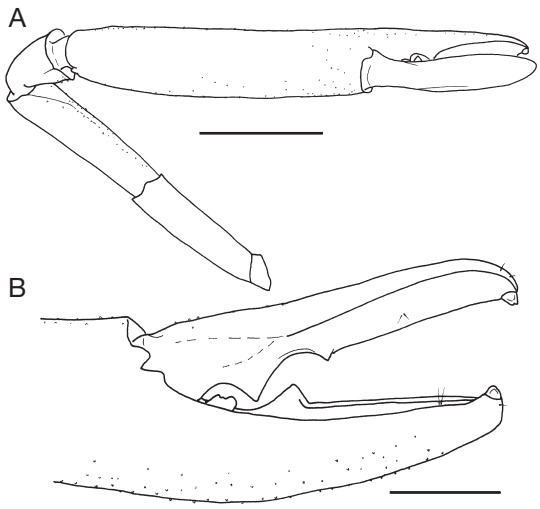

FIG. 15. — *Periclimenes paralcocki* Li & Bruce, 2006, ♀ (MNHN-Na 15610): **A**, major second pereiopod; **B**, same, fingers. Scale bar: A, 5 mm; B, 2 mm.

Egg number about 50, size moderate, maximum length 0.62 mm.

REMARKS

In the genus *Periclimenes*, *P. josephi* n. sp. is most similar to *P. priodactylus* Bruce, 1992, with the hepatic spine having a basal suture, the fingers of the first pereiopod being strongly subspatulate. It can be easily distinguished from the latter by the well developed cornea, which is wider than the stalk (in *P. priodactylus*, the stalk is about 1.2 times wider than the corneal diameter); the cutting edges of the first pereiopod fingers are armed with very fine and short pectinate setae along the distal half of the cutting edge (in *P. priodactylus*, the cutting edges are entire); the second pereiopods are long and slender, the palm is about 0.8-1.0 times of the carapace length, the carpus is about 0.6 times of the palm, 3.2 times of its distal width, the merus has a stout acute lateral distoventral tooth (in *P. priodactylus*, the chela of the second pereiopod is about 0.72 times of the carapace length, the carpus is short and stout, about 0.45 times of the palm length, 1.4 times longer than its distal width, the merus is unarmed distally); the ventral margin of dactylar corpus of the third pereiopod is entire, the ventral margin of the propod bears dense fine woolly hairs along the distal fourth of the propod length, the merus bears a stout acute lateral distoventral tooth (in *P. priodactylus*, the ventral margin of dactylar corpus of the third pereiopod is armed with very acute, compressed serrations, the ventral margin of the propod lacks woolly hairs, the merus is unarmed distally). The features of the merus of the second pereiopod armed with a distoventral tooth, the biunguiculate dactyl and setose ventral margin of the propod of the third pereiopod in the new species appears similar to those of *P. lanipes* Kemp, 1922. *Periclimenes josephi* n. sp. is distinctly different from *P. lanipes* by the hepatic spine having a distinct basal suture, the shape of the rostrum and the ratio and the form of the second pereiopod segments.

The hepatic spine on the carapace has a distinct basal suture, the spatulate fingers of the first pereiopod with the cutting edges of the fingers armed with short pectinate setae and the meri of the second and third pereiopods armed with a distoventral tooth, in the new species, resemble those of *Zenopontonia noverca* (Kemp, 1922). However, the hepatic spine is not completely mobile, the protopodite of the uropod with posterolateral angle is rounded, not produced and acute as that of *Z. noverca*, the pereiopods are more slender and longer that those of *Z. noverca*, and one or two rostral series teeth are situated on the carapace posterior to the orbital margin. Therefore, this new species is placed in *Periclimenes*, rather than in *Zenopontonia*.

Periclimenes paralcocki Li & Bruce, 2006 (Fig. 15)

Periclimenes paralcocki Li & Bruce, 2006: 707, fig. 27.

MATERIAL EXAMINED. — **Marquesas Is.** Nuku Hiva, MUSORSTOM 9, stn CP 1303, 8°50'S, 140°19'W, 705-794 m, 9.IX.1997, 1 ♀ (MNHN-Na 15610).

DISTRIBUTION. — The species was previously only known from its type locality: Bayonnaise Bank, Tuvalu, at 600 m depth.

REMARKS

The soft rostrum and carapace show that the specimen was in ecdysis. However, the three pairs of dorsolateral

spines on telson, the third pereiopod having the propod with spinules on flexor margin, and distal transverse rows of setae, the dactyl having the accessory tooth 0.31 of unguis length, indicate that the specimen belongs to this species. The holotype of the species lacked the major second pereiopod. The present specimen has the major second pereiopod (Fig. 15), which is very strong, large, covered with very fine tubercles on palm, outer surface of fixed finger, flexor margins of carpus and merus; the palm is 2.12 times as long as telson (soft carapace is unavailable for comparison with length), 4.32 times as long as its width; the fingers are 0.53 as long as palm, with strong lateral flanges, the tips are very hard, the cutting edges bear two teeth in proximal half respectively; the carpus is cup-like, 0.29 as long as palm, 1.59 times of its distal width; the merus is 0.53 of palm length, 3.85 as long as its width; the ischium is 0.50 as long as palm, 3.55 times of its width.

Periclimenes platydactylus n. sp.
(Figs 16-19)

TYPE MATERIAL. — **Marquesas Is.** Nuku Hiva, MUSORSTOM 9, stn CP 1177, 8°45.1'S, 140°15.1'W, 108-112 m, 25.VIII.1997, ovig. ♀, holotype (cl 1.80 mm) (MNHN-Na 15609).

TYPE LOCALITY. — French Polynesia (Marquesas Is); 108-112 m depth.

ETYMOLOGY. — "Platys", Greek for flat, broad; "daktylos", Greek for finger. The specific name is in reference to the dactyl of the second pereiopod having the lateral flange strongly expanded so that the dactyl looks broad and lamellar.

DISTRIBUTION. — Only known from type locality.

DESCRIPTION

A small sized pontoniine shrimp of subcylindrical body form.

Carapace smooth, glabrous. Rostrum well developed, compressed, shallow, horizontal, straight, extending to distal margin of scaphocerite, about 1.3 times carapace length; dorsal margin near straight, with 8 acute teeth, evenly distributed along whole length, subequal with exception of the anteriormost tooth smaller, posteriormost tooth at level just above orbital margin; lateral carinae distinct; ventral margin with basal half nearly straight, with 3 acute teeth on distal half, anteriormost ventral tooth just before second distal dorsal tooth; interdental spaces setose, proximal ventral carina non-setose. Supraorbital and epigastric spines absent; orbit feebly developed, inferior orbital angle produced, tip rounded; antennal spine acute, marginal, just below to inferior orbital angle, distinctly overreaching tip of inferior orbital angle; hepatic spine as well developed as antennal spine, slender, slightly below the level of antennal spine, posterior to level of posteriormost dorsal rostral tooth; anterolateral angle of carapace rounded.

Abdominal segments smooth, glabrous; third segment with tergum normal, without dorsally compressed process; sixth segment 0.72 of carapace length, 2.24 times of fifth segment length, 2.09 times longer than deep, posterolateral angle produced, acute, posteroventral angles rounded; pleura of first 3 segment broadly rounded, fourth and fifth posteriorly produced, posterolateral angles bluntly rounded. Telson 1.23 times sixth segment length, 4.09 times longer than anterior width, with 2 pairs of small dorsolateral spines at 0.51 and 0.79 of telson length, spines about 0.06 of telson length; posterior margin produced postero-medially, without acute posterior median point, with 3 pairs of posterior spines, lateral spines small, similar to dorsolateral spines, intermediate spines long, robust, about 0.19 of telson length, submedian spines slender, nude, about 0.09 of telson length.

Eye well developed, with globular cornea, diameter of cornea 0.26 of posterior orbital carapace length, without accessory pigment spot; stalk robust, width similar to corneal diameter, length 1.17 times as long as corneal diameter.

Antennular peduncle extending to level between distal first and second dorsal rostral teeth; proximal segment depressed, medial margin length 0.52 times as long as carapace, 2.09 times longer than its central width, lateral margin straight, with long slender acute distolateral tooth, reaching beyond level of produced anterolateral margin, anterior margin with a transverse row of short plumose setae, anterolateral margin with 4 plumose setae, medial margin straight, with small hooked ventromedial tooth at about 0.47 of medial margin length; stylocerite acute, extending to 0.54 of medial margin length; intermediate

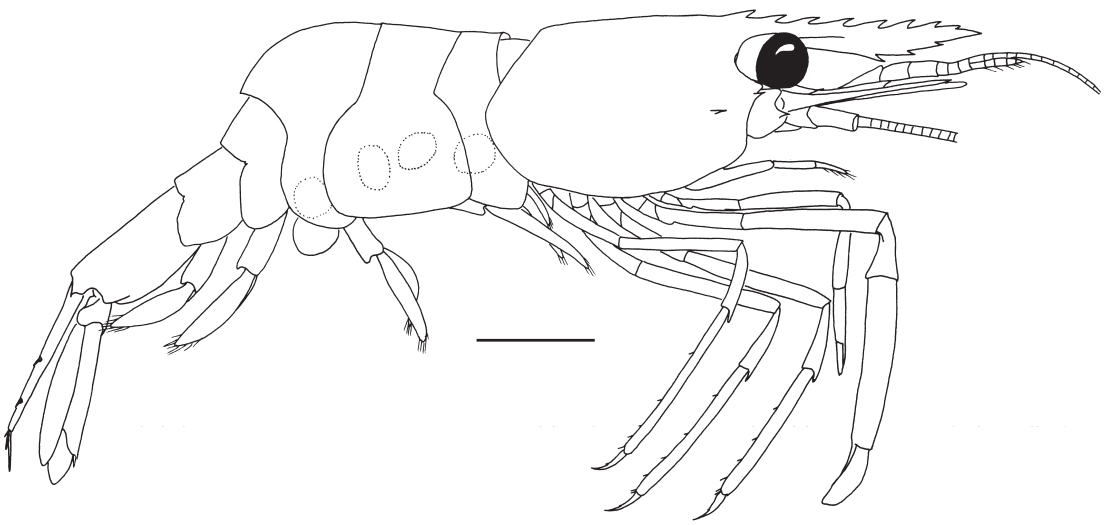

FIG. 16. — *Periclimenes platydactylus* n. sp., holotype ovig. ♀ (cl 1.80 mm) (MNHN-Na 15609), body, lateral view. Scale bar: 1 mm.

segment slightly depressed, dorsal length 0.28 of medial margin length of proximal segment, 1.07 times longer than maximum width, lateral margin slightly expanded laterally, with 4 plumose setae; distal segment cylindrical, 0.36 times as long as medial margin length of proximal segment, 1.70 times longer than distal width; upper flagellum biramous, with 3 proximal segments fused, shorter free ramus with 5 segments, 1.62 times of fused portion length, total length of shorter free ramus and proximal fused portion about 0.42 of carapace length, with 5 groups of aesthetascs; longer ramus slender, filiform, more than 1.2 times of carapace length; lower flagellum slender, filiform, about as long as carapace length.

Antennal basicerite robust, with small acute lateral tooth; scaphocerite well developed, extending near tip of rostrum, 0.93 times as long as carapace length, 3.33 times longer than wide, distal margin strongly produced, rounded, distinctly overreaching distolateral tooth, lateral margin feebly concave, with strong acute distolateral tooth; carpocerite extending to 0.45 of scaphocerite length, 4.61 times longer than wide; flagellum well developed, slender, more than 3.6 times of postorbital carapace length.

Epistome unarmed. Fourth thoracic sternites unarmed; posterior sternites narrow.

Mouthparts typical of the genus. Mandible without palp; molar process normal, with four strong blunt teeth; incisor process obliquely truncate distally with three stout acute teeth, central tooth smaller than outer teeth. Maxillula normal. Maxilla with short simple non-setose palp; basal endite bilobed distally, upper lobe stouter than lower, with simple setae distally; scaphognathite well developed, about 3.34 times longer than central width. First maxilliped normal. Second maxilliped with normal endopod, dactylar segment about 2.33 times longer than broad, with numerous serrulate spines medially; propodal segment broad, distal margin with several long serrulate spiniform setae; exopod with 2 long setae distally; without podobranch. Third maxilliped with endopod extending near to tip of carpocerite, ischiomerus and basis almost completely fused, combined segment 0.41 times of carapace length, 4.78 as long as proximal width ischiomerus, setose medially; penultimate segment about 0.52 of combined segment length, 3.39 times longer than proximal width, with 5 long and robust setae medially; terminal segment about 0.40 of combined segment length, slightly tapering distally, 4.52 times longer than proximal width, with short and robust setae medially, tip with 3 setae; exopod slender, extending to 0.93 of combined segment

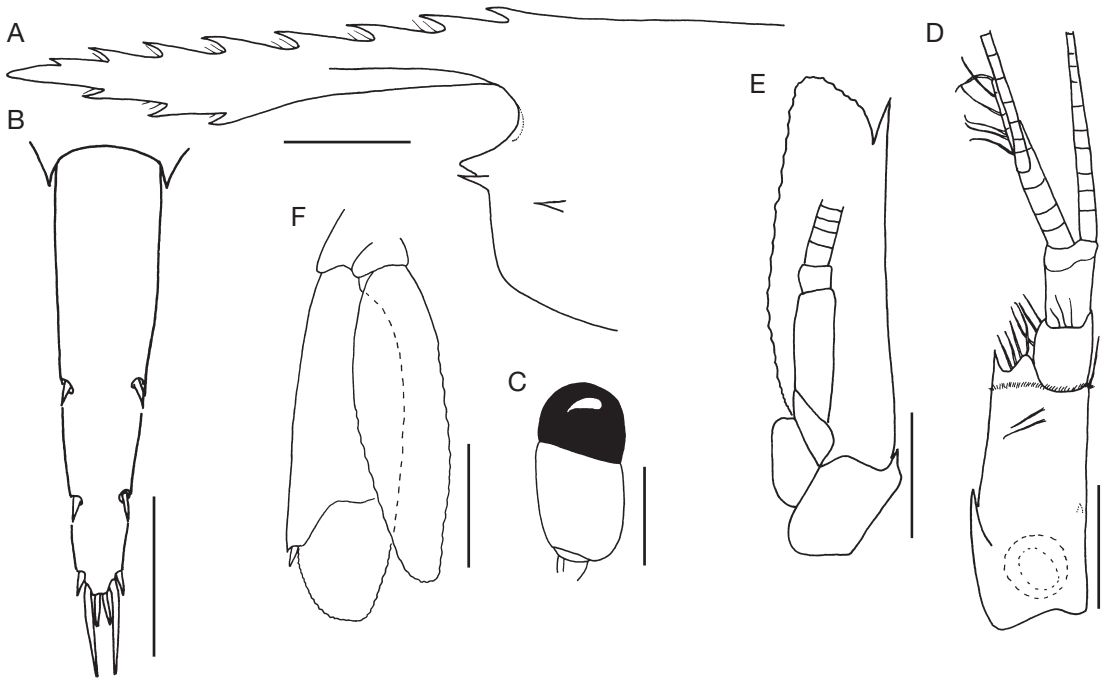

FIG. 17. — *Periclimenes platydactylus* n. sp., holotype ovig. ♀ (cl 1.80 mm) (MNHN-Na 15609): **A**, rostrum and anterior carapace; **B**, telson; **C**, eye; **D**, antennule; **E**, antenna; **F**, uropod. Scale bars: 0.5 mm.

length, with 4 fine setae distally; coxa with oval lateral plate and small arthrobranch.

Pereiopods slender. First pereiopods extending to distal end of scaphocerite; chela slender, 0.41 of carapace length, palm subcylindrical, 4.44 times as long as wide, with several long setae, ventral margin with 5 transverse rows of short cleaning setae on proximal 0.4 of length; fingers 0.57 times of palm length, slender, base slightly expanded, tapered distally, surrounded with several setae on outer surface, cutting edges sharp, entire, tips strongly hooked; carpus elongate, slightly swollen distally, 1.10 times of chela length, 6.61 times longer than distal width, with a row of serrulate cleaning setae distoventrally corresponding those on palm; merus 1.32 times of chela length, 7.34 times longer than distal depth; ischium 0.70 of chela length, 4.43 times longer than distal depth; basis and coxa without special features.

Second pereiopods sub-symmetrical, slender, smooth, glabrous, exceeding carpocerite by chela, carpus and distal fourth of merus. Major (right) second pereiopod with chela 1.14 of carapace length, palm subcylindrical, subuniform, 7.16 times longer than maximum width at proximal third of palm length, with sparse setae; dactyl 0.40 of palm length, 3.31 times longer than maximum depth at about 0.6 of dactylar length, with strongly developed lateral flange so that the dactyl looks lamellar, tip strongly hooked, with cluster of long subdistal setae, cutting edges sharp, with 2 small teeth at 0.24 and 0.39 of dactylar length; fixed finger somewhat robust, slightly tapering distally, 5.10 times longer than proximal depth, without lateral flange, tip strongly hooked, with cluster of long subdistal setae, cutting edge sharp, with 2 teeth at 0.34 and 0.47 of fixed finger length larger than dactylar teeth, with proximal excavation present to fit proximal part of dactyl cutting edge; carpus cup-like, 0.22 times of chela length, 1.82 times longer than distal width; merus slightly compressed, 0.64 of chela length, 5.87 distal depth, unarmed distoventrally; ischium

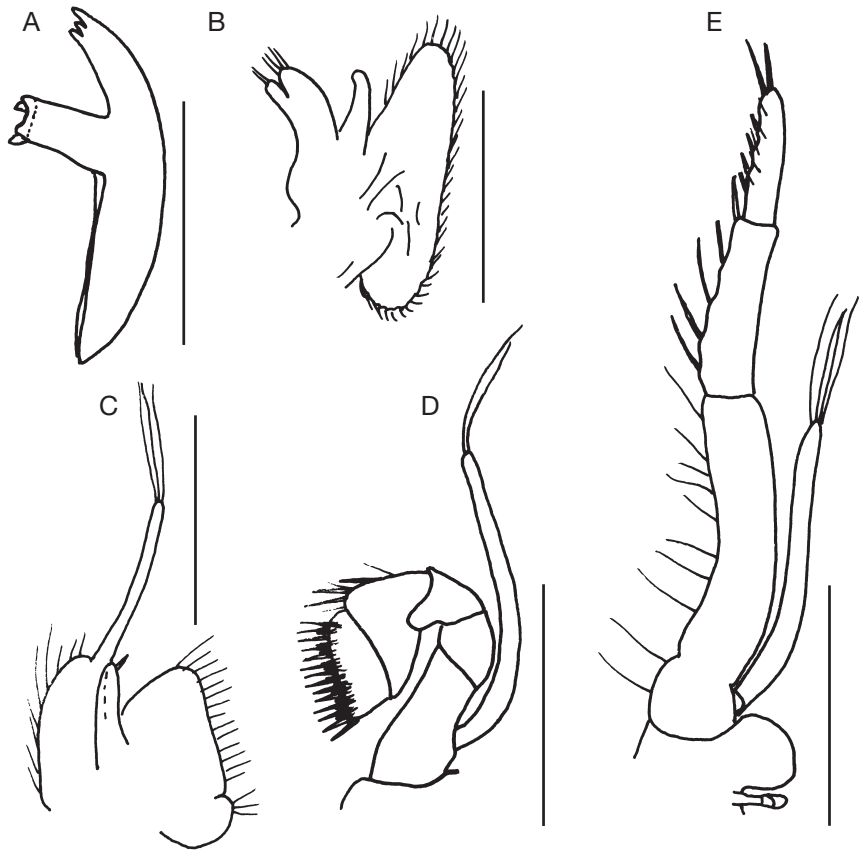

FIG. 18. — *Periclimenes platydactylus* n. sp., holotype ovig. ♀ (cl 1.80 mm) (MNHN-Na 15609): **A**, mandible; **B**, maxilla; **C**, first maxilliped; **D**, second maxilliped; **E**, third maxilliped. Scale bars: 0.5 mm.

slightly compressed, 0.35 times of chela length, 4.30 times distal depth; basis and coxa normal. Minor (left) second pereiopod similar to major, very slightly smaller than major.

Ambulatory pereiopods slender. Third pereiopod exceeding carpocerite by dactyl and propod, overreaching distal end of scaphocerite by dactyl and distal third of propod; dactyl elongate, slender, compressed, 0.24 of propod length, 5.32 times longer than basal depth, unguis indistinct, very slender and elongate, ventral margin evenly concave, corpus with ventral margin near straight, distal accessory tooth minute in left third pereiopod, wanted or absent in right third pereiopod and other ambulatory pereiopods; propod compressed, subuniform, 0.76 of carapace length, 10.59 times longer than deep, with pair of long slender simple distoventral spines, spines 0.07 of propod length, extending proximal 0.31 of dactyl length, distal end of propod with ventrolateral, ventromedial and dorsal cluster of long curved setae, ventral margin of propod with four single spines distributed at 0.10, 0.22, 0.41 and 0.71 of propod length, of which, distal three similar to or slightly shorter than distoventral spines, proximal ventral spine much shorter than distoventral spines, several long curved setae along whole length of ventral and dorsal margins; carpus subcylindrical, tapered proximally, 0.37 of propod length, 3.78 times longer than distal depth, with distinct distodorsal lobe; merus slightly compressed, 0.94 of propod length, 8.60 times longer than distal depth, subuniform, unarmed; ischium

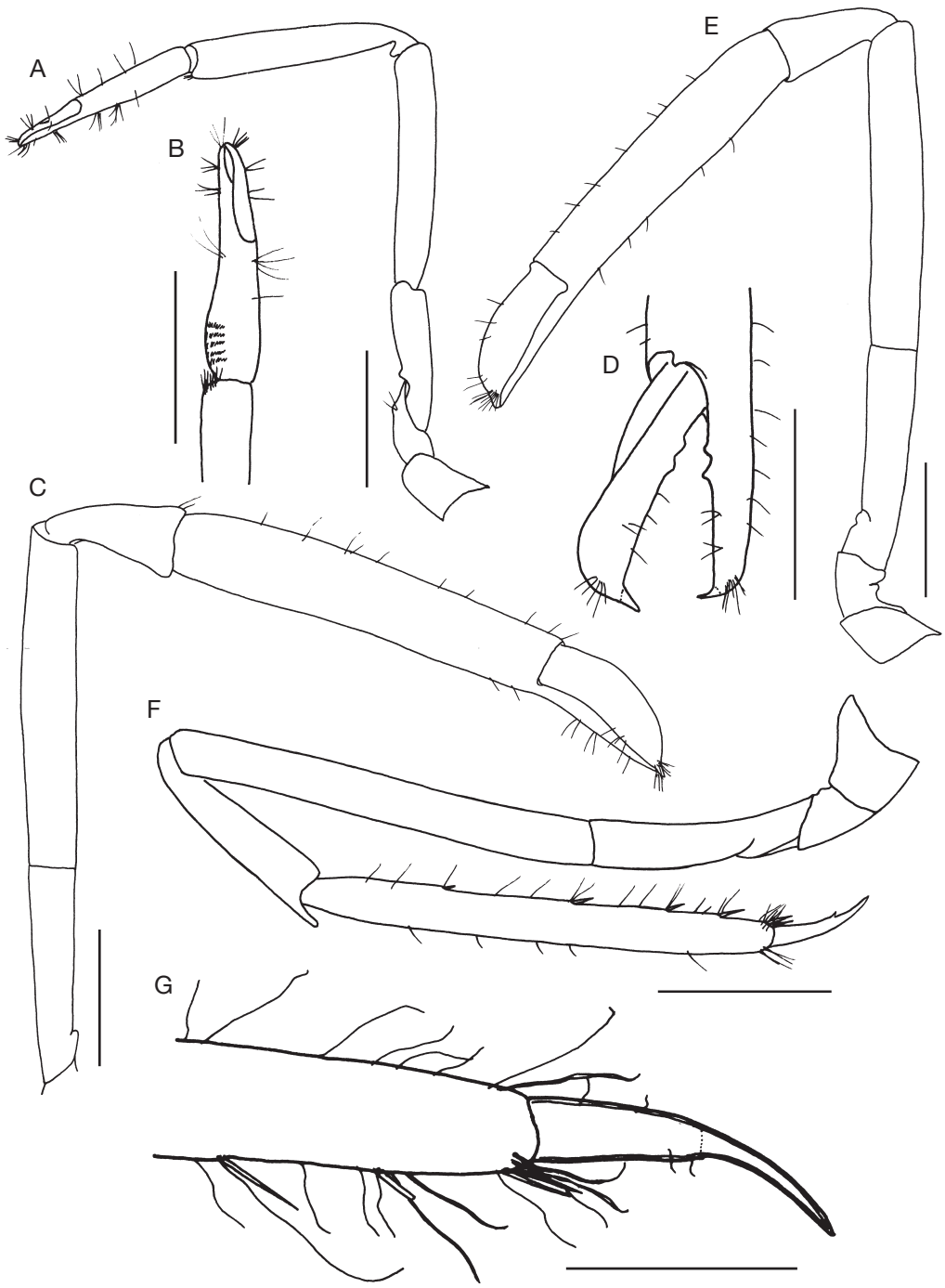

FIG. 19. — *Periclimenes platydactylus* n. sp., holotype ovig. ♀ (cl 1.80 mm) (MNHN-Na 15609): **A**, first pereiopod; **B**, same, chela; **C**, major (right) second pereiopod; **D**, same, chela; **E**, minor (left) second pereiopod; **F**, left third pereiopod; **G**, right third pereiopod, dactyl and distal part of propod. Scale bars: A-F, 0.5 mm; G, 0.25 mm.

slightly tapered proximally, 0.43 of propod length, 4.81 times longer than distal depth; basis and coxa without special features. Fourth and fifth pereiopods similar to third, fourth propod 1.04, fifth propod 1.08 times as long as third propod; fifth exceeds carpocerite by dactyl and distal 0.60 of propod.

Uropod distinctly exceeding telson. Protopodite with posterolateral angle short, rounded; exopod 0.80 times as long as carapace length, 3.16 times longer than central width, lateral border slightly convex, with very small acute distal tooth and large mobile spine medially, diaeresis distinct; endopod narrow, 0.92 of exopod length, 3.53 times longer than wide.

Egg with maximum length 0.41 mm, egg number about 18.

REMARKS

The systematic position of *Periclimenes platydactylus* n. sp. whitin the genus is not clear. Its lamellar dactyl of the second pereiopod, which is about 0.40 of the length of the palm, the rostral formula of 1+7/3 with the posteriormost tooth situated above the orbital margin, distinctly anterior to the level of hepatic spine, the simple chela of the first pereiopod, biunguiculate ambulatory dactyls in which the accessory tooth is minute, may differentiate the new species from most others of the genus *Periclimenes*. The well developed lateral dactylar flange of the second pereiopod of the new species are similar to those of the *P. alcocki* group, but the new species can be distinguished from all the members of that group by the combined features of only two pairs of dorsolateral telson spines, the minute accessory tooth of ambulatory dactyl, the posteriormost tooth of dorsal rostral series situated above the orbital margin, and the shallower bathymetric range of 108-112 m (the *P. alcocki* group is usually found at more than 200 m depth).

Periclimenes polynesiensis n. sp.
(Figs 20-23)

TYPE MATERIAL. — **Marquesas Is.** Nuku Hiva, MUSORSTOM 9, stn CP 1177, 8°45.1'S, 140°15.1'W, 108-112 m, 25.VIII.1997, ovig. ♀ holotype (cl 3.80 mm) (MNHN-Na 15608).

TYPE LOCALITY. — French Polynesia (Marquesas Is); 108-112 m depth.

ETYMOLOGY. — The specific name is derived from the type locality, French Polynesia.

DISTRIBUTION. — Only known from the type locality.

DESCRIPTION

A small sized pontoniine shrimp of subcylindrical body form.

Carapace smooth, glabrous. Rostrum well developed, horizontal, compressed, tapered distally, extending slightly beyond distal margin of scaphocerite, subequal to carapace length; dorsal margin nearly straight, with 8 acute teeth, subequal, evenly distributed along whole rostral length, all proper to rostrum, posteriormost tooth with obscure basal suture; lateral carinae feebly developed; ventral margin with distinct basal arch, distally straight, with 3 acute teeth from 0.46 to 0.80 of rostral length, anteriormost ventral tooth just behind anteriormost dorsal tooth; interdental spaces and proximal ventral carina feebly setose. Supraorbital spine absent; epigastric spine acute, smaller than dorsal rostral tooth, situated at anterior 0.29 of carapace length, with distinct basal suture; orbit with middle part strongly concave, parts of dorsal and ventral to the concave part nearly straight, inferior orbital angle strongly produced as subovate lobe, tip rounded; antennal spine acute, marginal, distant to inferior orbital angle, extending to tip of inferior orbital angle; hepatic spine slightly larger than antennal spine, slender, below level of antennal spine, anterior to level of epigastric spine; anterolateral angle of carapace not produced, bluntly rounded.

Abdominal segments smooth, glabrous; third segment with tergum normal, without dorsal compressed process; sixth segment subequal to carapace length, 2.44 times length of fifth, compressed, 2.40 times longer than deep, posterolateral and posteroventral angles blunt; pleura of first 3 segments broadly rounded, fourth and fifth posteriorly produced, posterolateral angles bluntly rounded. Telson about 0.79 of sixth abdominal segment length, 4.85 times longer than anterior width, with 2 pairs of small dorsolateral spines at 0.50 and 0.78 of telson length; posterior margin rounded, without

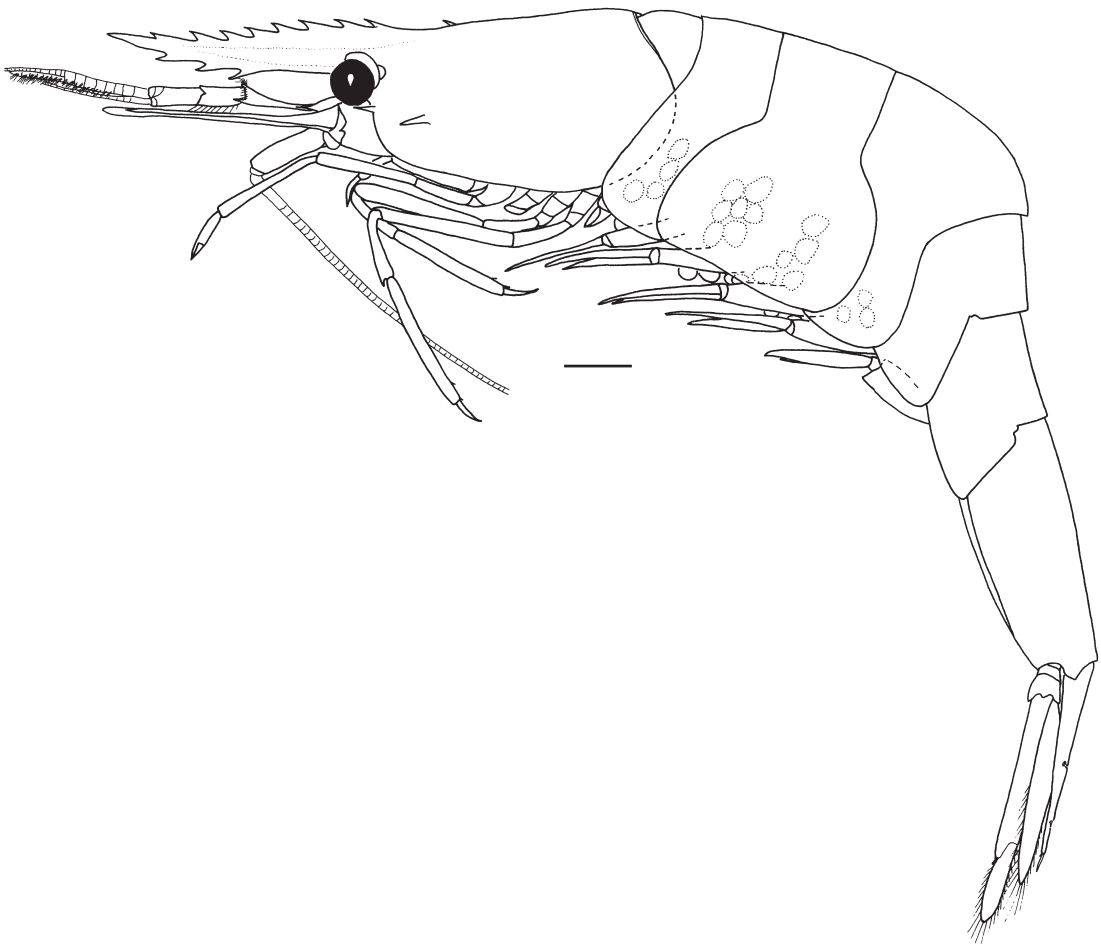

FIG. 20. — *Periclimenes polynesiensis* n. sp., holotype ovig. ♀ (MNHN-Na 15608), body, lateral view. Scale bar: 1 mm.

posterior median point, with 3 pairs of posterior spines, lateral spines small, similar to dorsal spines, intermediate spines long, robust, about 0.10 of telson length, submedian spines about half of intermediate spine length.

Eye well developed, with globular cornea, diameter of cornea 0.18 of postorbital carapace length, with distinct accessory pigment spot; stalk long, slightly tapering distally with constriction at distal conjunction with cornea, 1.11 times of corneal diameter, 1.14 times of proximal width.

Antennular peduncle reaching to level of anterior ventral rostral tooth; proximal segment depressed, medial length 0.40 times as long as carapace, 2.32 times longer than its central width, lateral margin distinctly convex, with long slender acute distolateral tooth, reaching level of produced anterolateral margin, medial margin with small ventromedial tooth at about 0.5 of proximal segment length; stylocerite acute, reaching to 0.49 of proximal segment length; intermediate segment 0.40 of proximal segment length, 1.85 times of maximum width, lateral margin expanded laterally, setose; distal segment cylindrical, slender, 0.49 times as long as proximal segment length, 2.80 times as long as wide; upper flagellum biramous, with 8 proximal segments fused, shorter free ramus with 6 segments, 0.67 of fused portion length, total length

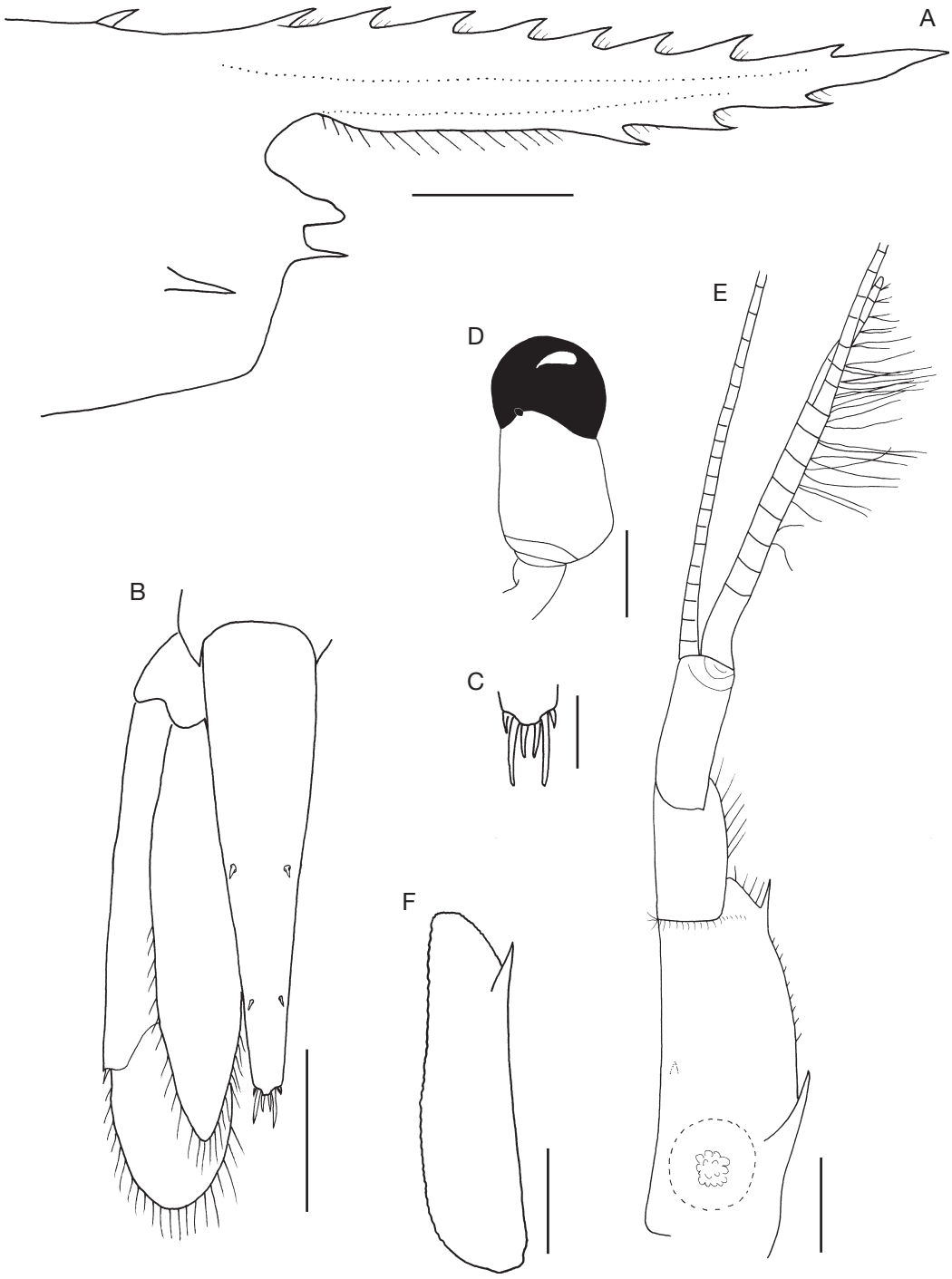

Fig. 21. — *Periclimenes polynesiensis* n. sp., holotype ovig. ♀ (MNHN-Na 15608): **A**, carapace; **B**, telson and uropod; **C**, posterior tip of telson; **D**, eye; **E**, antennule; **F**, scaphocerite. Scale bars: A, B, F, 1 mm; C, 0.25 mm; D, E, 0.5 mm.

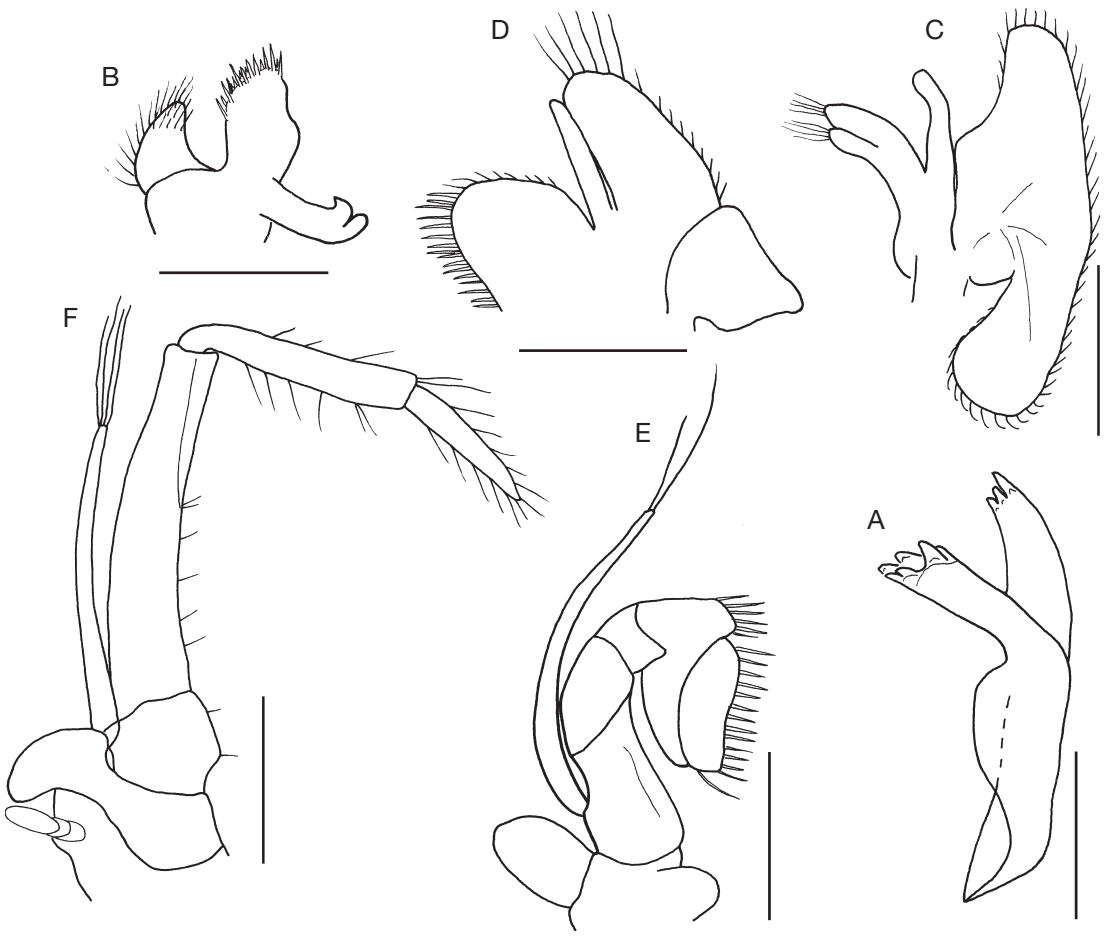

FIG. 22. — *Periclimenes polynesiensis* n. sp., holotype ovig. ♀ (MNHN-Na 15608): **A**, mandible; **B**, maxillula; **C**, maxilla; **D**, first maxilliped; **E**, second maxilliped; **F**, third maxilliped. Scale bars: 0.5 mm.

about 0.56 of carapace length, with 16 groups of aesthetascs; longer ramus slender, filiform, 0.56 times of carapace length; lower flagellum slender, filiform, 1.11 times of carapace length.

Antennal basicerite robust, with small acute lateral tooth; scaphocerite well developed, extending near tip of rostrum, 0.93 of carapace, 3.71 times longer than wide, distal margin strongly produced, rounded, far overreaching distolateral tooth, lateral margin near straight, feebly concave over distal 0.8, with strong acute distolateral tooth; carpocerite 0.31 of scaphocerite length, 2.57 times longer than wide; flagellum well developed, slender, about 5.0 times postorbital carapace length.

Epistome unarmed. Fourth thoracic sternites unarmed; posterior sternites narrow.

Mouthparts typical of the genus. Mandible without palp; molar process normal, with 4 strong blunt teeth, lower inner tooth bilobed; incisor process obliquely truncate distally with 3 stout acute teeth, central tooth smaller than outer teeth. Maxillula normal. Maxilla with short simple non-setose palp; basal endite deeply bilobed, upper lobe stouter than lower, with simple setae distally; scaphognathite well developed, about 2.92 times longer than central

width. First maxilliped normal. Second maxilliped with normal endopod, dactylar segment about 2.64 times longer than broad, with numerous serrulate spines medially; propodal segment broad, distal margin with numerous long finely serrulate spiniform setae; coxa produced medially; exopod with 2 long setae distally; epipod simple, without podobranch. Third maxilliped with endopod slender, extending to tip of carpocerite, ischiomerus and basis distinct, ischiomeral segment slightly tapered distally, 0.24 of carapace length, 4.60 as long as proximal width, setose medially; penultimate segment about 0.65 of ischiomerus length, 5.68 times longer than distal width; terminal segment about 0.45 of ischiomeral length, distally tapering, 5.48 times longer than proximal width, with long setae along entire length; exopod slender, with 4 setae distally; coxa with oval lateral plate; arthrobranch distinct.

Pereiopods short and slender. First pereiopods extending to distal end of distal segment of antennular peduncle; palm of chela slightly compressed, 0.15 times of carapace length, 2.80 times as long as maximum depth, ventral margin with 4 transverse rows of short cleaning setae on proximal 0.3 of length; fingers 0.79 times of palm length, slender, base slightly expanded, tapered distally, surrounded with clusters curved setae laterally, cutting edges sharp, entire, tips hooked; carpus elongate, slightly swollen distally, 3.0 times of palm length, 8.21 times longer than distal width, with row of serrulate cleaning setae distoventrally corresponding to those on chela, including 5 long and 7 short setae; merus 2.76 of palm length, 7.43 times longer than distal width; ichium 1.63 of palm length, 5.13 times longer than distal width; basis and coxa without special features.

Left (major?) second pereiopod lost. Right (minor?) second pereiopod slender, smooth, glabrous, exceeding carpocerite by chela and carpus; palm subcylindrical, slightly compressed, expanding distally, 0.39 of carapace length, 3.66 times longer than distal depth; fingers 0.47 of palm length, tapering distally, with strongly hooked tips and long subdistal setae, dactyl 3.73 times longer than proximal depth, cutting edges sharp, with very low tooth at middle of dactyl length, fixed finger slightly more robust, cutting edge with 2 very low teeth at positions just proximal and distal to the tooth on dactyl when fingers closed, and proximal hollow fitting proximal part of dactyl cutting edge; carpus slender, long, 1.14 of palm length, 5.97 of the distal width; merus 1.08 of palm length, 7.50 of distal width, unarmed distoventrally; ischium 1.27 times of palm length, 9.61 times distal width; basis and coxa normal.

Third pereiopod exceeding carpocerite by dactyl and propod, reaching distal end of scaphocerite; dactyl slender, compressed, simple, 0.25 of propod length, unguis distinct, very slender and elongate, 0.77 of corpus length, corpus 2.74 times longer than proximal depth, ventral margin unarmed, without distal accessory tooth; propod compressed, subuniform, 0.54 of carapace length, 10.1 times longer than deep, with pair of short slender simple distoventral spines, spines 0.04 of propod length, 0.27 of dactyl corpus length, ventral margin with two single spines distributed at distal 0.33 and 0.09 of propod length, of which, distal spine long, 0.32 of dactyl corpus length, proximal tooth very short, 0.45 of distal tooth length, distal margin of propod with 2 distoventral and 2 distodorsal long curved setae, without transverse rows of setae; carpus 0.46 of propod length, 4.5 times longer than distal width, distodorsal margin with produced lobe; merus 1.04 of propod length, 8.6 times longer than wide, uniform, unarmed; ischium 0.42 of propod length, 3.58 times longer than distal width, slightly tapered proximally; basis and coxa without special features. Fourth and fifth pereiopods similar to third, fourth propod 1.06, fifth propod 1.16 times as long as third propod length; fifth exceeds carpocerite by dactyl and distal 0.80 of propod, propod with transverse rows of cleaning setae distolaterally.

Uropod distinctly exceeding telson, exopod exceeds telson by lobe distal to diaeresis; protopodite with posterolateral angle short, rounded; exopod 0.93 of carapace length, 4.11 times longer than central width, lateral border near straight, with very small acute distal tooth, and large mobile spine medially, diaeresis distinct; endopod narrow, 0.77 of exopod length, 4.32 times longer than wide.

Egg with moderate size, maximum length 0.46 mm.

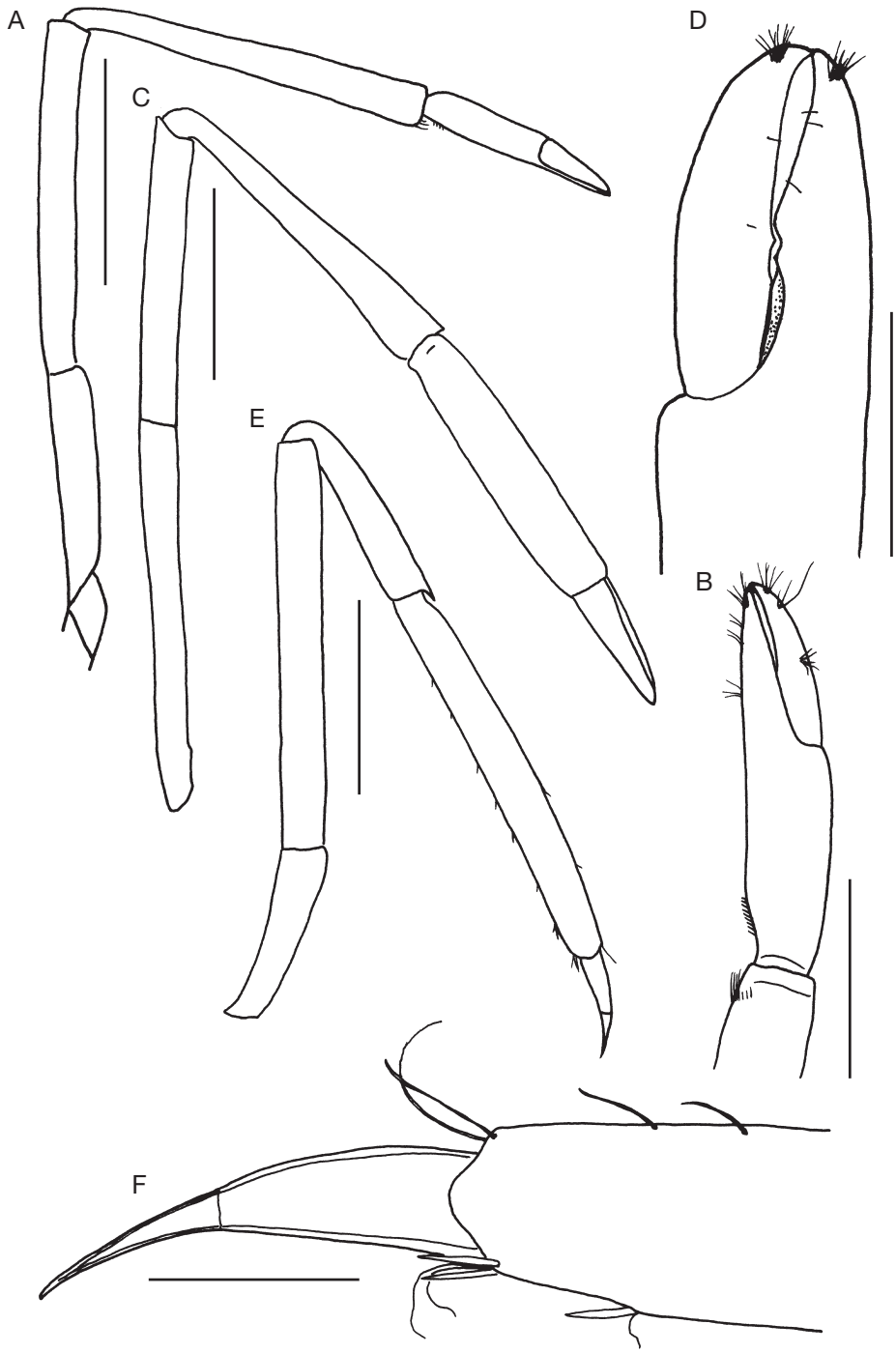

FIG. 23. — *Periclimenes polynesiensis* n. sp., holotype ovig. ♀ (MNHN-Na 15608): **A**, first pereiopod; **B**, same, chela; **C**, second pereiopod; **D**, same, fingers; **E**, third pereiopod; **F**, same, dactyl and distal part of propod. Scale bars: A, C, E, 1 mm; B, D, 0.5 mm; F, 0.25 mm.

REMARKS

Periclimenes polynesiensis n. sp. closely resembles *P. uniunguiculatus* Bruce, 1990, especially in the form of the rostrum and pereiopods. It can be distinguished from the latter by the epigastric spine being widely separated from the rostral series of dorsal teeth, the hepatic spine being not noticeably larger than antennal spine, the eyestalk being more slender and elongate, the dactyli of ambulatory pereiopods being more slender and longer, 0.25 times as long as the propod of third pereiopod (vs. 0.12 in *P. uniunguiculatus*), the third propod lacking transverse rows of long setae distoventrally. The new species is also closely similar to *P. fujinoi* Bruce, 1990. It differs from the latter by the epigastric spine not being very posterior (at anterior 0.29 of carapace length, vs. 0.4 in *P. fujinoi*), all dorsal rostral teeth being on rostrum (vs. posterior 2 on carapace posterior to orbital margin in *P. fujinoi*), the eye having a distinct accessory pigment spot (lacking the spot in *P. fujinoi*), the third propod having a pair of distoventral spines (single only in *P. fujinoi*). The proximal antennular peduncle segment of *P. polynesiensis* n. sp. with the distal margin being produced anteriorly, reaching tip of the distolateral tooth, the lateral margin being distinctly convex, is different from those of *P. uniunguiculatus* and *P. fujinoi*, too.

The loss of the major second pereiopod of the holotype limits the comparison of the new species with the similar species, however, the combined morphological features of rostrum, eye, and ambulatory pereiopods indicates that it is distinct from the other closely allied species. Captured at a depth of 102-118 m, it occurs in much shallower depth than *P. uniunguiculatus* (456-1280 m) and *P. fujinoi* (487-610 m).

Periclimenes soror Nobili, 1904

Periclimenes soror Nobili, 1904: 232.

Periclimenes soror – Bruce 1978c: 299-306, figs 1-6. — Chace & Bruce 1993: 122. — Poupin 1998: 17. — Li 2000: 237, fig. 316. — Li & Bruce 2006: 721.

MATERIAL EXAMINED. — **Tuamotu Is.** Mururoa, 2-3 m, coll. J. Poupin, X.1995, 1 ♂, 2 ovig. ♀♀ (MNHN-Na 14925).

HOST. — *Culcita novaeguineae* Müller & Troschel, 1842 (Echinodermata, Asteroidea, Phanerozonia, Oreasteridae). Previously reported associating with *C.* ?*novaeguineae* by Poupin (1998) from the Society and Tuamotu islands.

DISTRIBUTION. — Type locality: Djibouti. Previously also known from Red Sea, Kenya, Zanzibar, Tanganyika, Madagascar, Comoro Is, Seychelles, Chagos Is, Hong Kong, Indonesia, Philippines, Sabah, Japan, Australia (Western Australia, Northern Territory, Queensland, New South Wales), Caroline Is, Marshall Is, Marianas Is, Solomon Is, New Caledonia, Fiji Is, French Polynesia (Tuamotu Is, Society Is), Hawaii, and East Pacific region in Gulf of California, Panama and Columbia; shallow waters, 0-30 m depth with certainty. Previously reported from Tuamotu Is by Poupin (1998).

REMARKS

The specimens were noted as dark purple in life by the collector.

Periclimenes uniunguiculatus Bruce, 1990

Periclimenes uniunguiculatus Bruce, 1990: 167, figs 12-15, 39e; 1996: 239-241, figs 14d-f, 28g. — Li 2000: 244, fig. 324. — Li & Bruce 2006: 722.

MATERIAL EXAMINED. — **Austral Is.** MacDonald Bank, BENTHAUS, stn CP 1873, 29°S, 140°15'W, 456-813 m, 4.XI.2002, 1 ♀ (MNHN-Na 15988).

DISTRIBUTION. — Type locality: New Caledonia. Previously also known from Comoro Is; 460-1280 m depth. Not previously reported from French Polynesia.

REMARKS

The specimen has a rostral formula of 2+8/4. Both second pereiopods are missing.

Periclimenes vicinus n. sp.
(Figs 24-27)

TYPE MATERIAL. — **Austral Is.** Tubuai, BENTHAUS, stn CP 1967, 23°21.4'S, 149°34.2'W, 600-1200 m, 19.XI.2002, ♀ holotype (cl 4.0 mm) (MNHN-Na 15987).

TYPE LOCALITY. — French Polynesia (Austral Is); 600-1200 m depth.

ETYMOLOGY. — "Vicin", Latin for close, near to, as the new species very closely resembles *Periclimenes uniunguiculatus*, Bruce, 1990.

DISTRIBUTION. — Only known from the type locality.

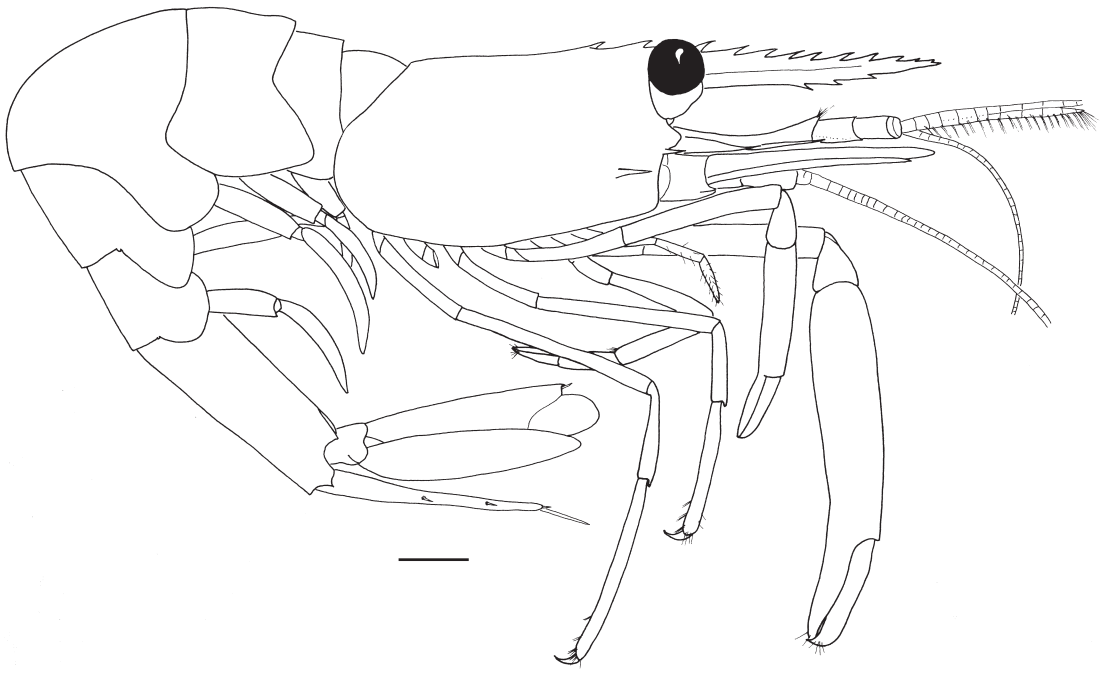

FIG. 24. — *Periclimenes vicinus* n. sp., holotype ♀ (MNHN-Na 15987), body, lateral view. Scale bar: 1 mm.

DESCRIPTION

A small sized pontoniine shrimp of subcylindrical body form.

Carapace smooth, glabrous. Rostrum well developed, horizontal, compressed, moderately slender, extending slightly beyond distal margin of scaphocerite, subequal to carapace length; dorsal margin near straight, with 12 long, acute teeth (not including epigastric spine), subequal, evenly distributed along whole rostral length, except for 2 smaller distal teeth, posteriormost tooth on carapace posterior to posterior orbital margin, second tooth just above the posterior orbital margin; lateral carina distinct, sharp, extending anteriorly to level of anterior fourth dorsal rostral tooth; ventral margin feebly convex, with 3 acute teeth from 0.47 to 0.71 of rostral length, anteriormost ventral tooth below fourth dorsal tooth from tip. Supraorbital spine absent; epigastric spine acute, smaller than posteriormost dorsal rostral tooth, situated at anterior 0.28 of carapace length, with distinct basal suture; orbital margin evenly concave, inferior orbital angle produced, rounded; antennal spine acute, just below inferior orbital angle, extending beyond tip of inferior orbital angle; hepatic spine long, slender, and much larger than antennal spine, extending near to anterior margin of carapace, arising below level of antennal spine, anterior to level of epigastric spine; anterolateral angle of carapace not produced, bluntly rounded.

Abdominal segments smooth, glabrous; third segment with tergum distinctly gibbous, without dorsal compressed process, posterior margin entire; sixth segment long, slender, subcylindrical, 0.82 of carapace length, 2.42 times of fifth segment length, 2.87 times longer than deep, posterolateral angle acute, posteroventral angle blunt; pleura of first 3 segments broadly rounded, fourth and fifth posteriorly produced, posterolateral angles bluntly rounded. Telson long, narrow, 1.03 of sixth segment length, 4.64 times longer than anterior width, with two pairs of dorsolateral spines at 0.46 and 0.74 of telson length, spines 0.05 of telson length; posterior margin rounded, without acute posterior median

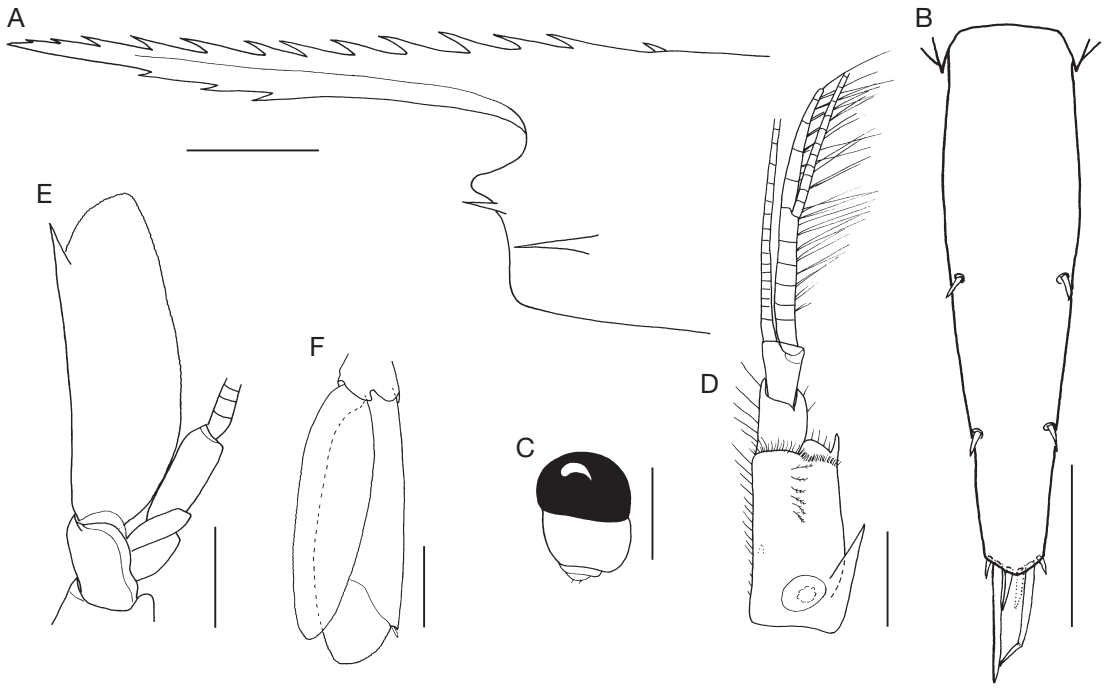

FIG. 25. — *Periclimenes vicinus* n. sp., holotype ♀ (MNHN-Na 15987): **A**, rostrum and anterior part of carapace, lateral view; **B**, telson, dorsal view; **C**, eye; **D**, antennule; **E**, antenna; **F**, uropod. Scale bars: 1 mm.

point, with 3 pairs of posterior spines, lateral spines small, similar to dorsal spines, intermediate spines long, slender, 0.22 of telson length, submedian spines about 0.33 of intermediate spine length.

Eye well developed, with globular cornea, diameter of cornea 0.23 of postorbital carapace length, without accessory pigment spot; stalk short, robust, subcylindrical, subuniform, 0.63 times of width, width slightly narrower than diameter of cornea.

Antennular peduncle reaching to level of anterior third dorsal rostral tooth; proximal segment depressed, medial length 0.46 times as long as carapace, 2.16 times longer than central width, lateral margin distinctly convex, with long, slender, acute, slightly medially curved distolateral tooth, extending beyond level of produced anterolateral margin, medial margin with small ventromedial tooth at proximal 0.45 of proximal segment length; stylocerite acute, reaching to 0.63 of proximal segment length; intermediate segment short, dorsal length 0.26 times of proximal segment length, slightly depressed, 1.01 times of width; distal segment cylindrical, slender, 0.38 times as long as proximal segment length, 1.89 times as long as wide; upper flagellum biramous, with 6 proximal segments fused, shorter free ramus with 5 segments, 0.91 times of fused portion length, total length about 0.69 times of carapace length, with 18 groups of aesthetascs; longer ramus slender, filiform; lower flagellum slender, filiform.

Antennal basicerite robust, with acute lateral tooth; scaphocerite well developed, extending near tip of rostrum, 0.83 of carapace, 3.08 times longer than wide, distal margin produced, rounded, slightly overreaching tip of distolateral tooth, lateral margin near straight, feebly concave, with strong acute distolateral tooth; carpocerite 0.29 of scaphocerite length, 3.61 times longer than wide; flagellum well developed, slender, filiform.

Epistome unarmed. Fourth thoracic sternite with low transverse ridge with median notch, fifth with low transverse ridge with similar median notch; posterior sternites narrow.

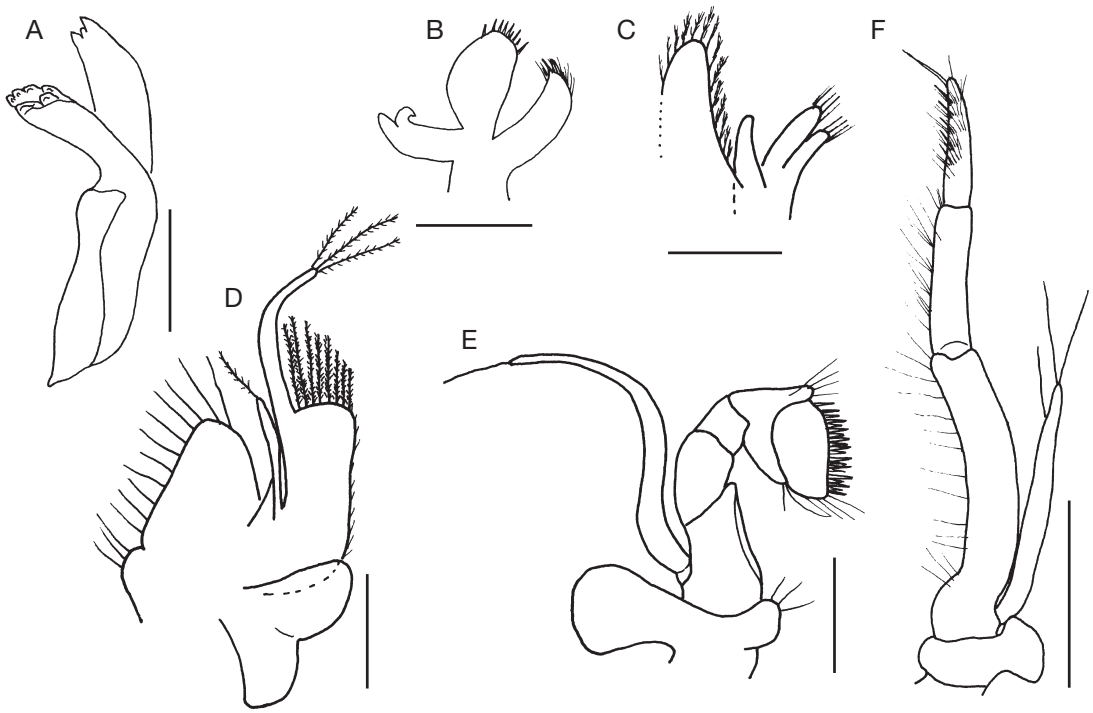

FIG. 26. — *Periclimenes vicinus* n. sp., holotype ♀ (MNHN-Na 15987): **A**, mandible; **B**, maxillula; **C**, maxilla; **D**, first maxilliped; **E**, second maxilliped; **F**, third maxilliped. Scale bars: A-E, 0.5 mm; F, 1 mm.

Mouthparts typical of the genus. Mandible without palp; molar process normal, with blunt teeth, lower inner tooth bilobed; incisor process obliquely truncate distally with three stout acute teeth, central tooth smaller than outer teeth. Maxillula with well developed bilobed palp, lower lobe with small ventral tubercle. Maxilla with short simple non-setose palp; basal endite deeply bilobed, upper lobe stouter than lower, with simple setae distally; scaphognathite damaged when dissected. First maxilliped with slender palp with long subterminal setulose seta; exopod well developed, caridean lobe large, broad, flagellum slender with 3 plumose distal setae; epipod large, triangular, bilobed. Second maxilliped with normal endopod, dactylar segment broad, 1.85 times longer than maximum width, with numerous serrulate spines medially; propodal segment broad, distal margin with numerous long finely spiniform setae; coxa produced medially, with 3 simple setae; exopod with slender flagellum with single long simple distal seta; epipod simple, without podobranch. Third maxilliped with endopod slender, extending to proximal 0.33 of carpocerite, ischiomerus and basis fused, basal portion medially expanded, convex, ischiomerus subuniform, compressed, combined segment length 0.39 of carapace length, 5.50 times of central width, setose medially; penultimate segment 0.50 of combined segment length, 3.62 times longer than basal width, setose medially; terminal segment 0.45 of combined segment length, distally tapering, 4.60 times longer than proximal width, with groups of long finely serrulate spiniform setae medially; exopod slender, extending to 0.91 of combined segment length, with 2 terminal and 1 subterminal simple setae; coxa with oval lateral plate; arthrobranch rudimentary.

Pereiopods long. First pereiopods extending near to distal end of scaphocerite, beyond carpocerite by chela and distal half of carpus; palm of chela subcylindrical, 0.22 times of carapace length, 3.22 times

as long as maximum depth, ventral margin with 4 transverse rows of short cleaning setae on proximal 0.33 of length; finger 0.78 times of palm length, slender, base slightly expanded, tapered distally, surrounded with 5 (dactyl) or 6 (fixed finger) clusters of long setae outer surface in distal half, cutting edges sharp, entire, tips hooked; carpus slightly swollen distally, 1.70 times of palm length, 5.76 times longer than distal width, with a row of serrulate cleaning setae distoventrally corresponding those on palm; merus 1.95 times of palm length, 7.76 times longer than distal width; ischium 0.79 of palm length, 3.43 times longer than distal width; basis and coxa without special features.

Second pereiopods well developed, similar, unequal. Major (left) second pereiopod smooth, glabrous, exceeding carpocerite by chela and carpus; palm subcylindrical, 0.98 of carapace length, very slightly swollen proximally, 4.14 times longer than maximal depth, fingers 0.46 of palm length, with stout hooked tips; dactyl compressed, uniform except for slenderer tip, 5.37 times longer than deep, lateral flange developed, sharp in distal 0.60 of dactyl length, distal 0.59 of cutting edge entire, sharp, a strong and shallow blunt tooth at proximal 0.28 of cutting edge, 2 shallow notches present respectively proximal and distal to the tooth on cutting edge; fixed finger similar, without lateral flange, distal 0.72 of cutting edge entire, sharp, with 2 teeth at proximal 0.21 and 0.29 of cutting edge, distal tooth shallow, continuing with distal entire cutting edge, proximal tooth developed, rounded, a notch present between the 2 teeth, corresponding to the dactyl tooth; carpus cup-like, 0.23 of palm length, 1.38 times longer than distal width, feebly excavate distally, proximally tapered, unarmed; merus subcylindrical, subuniform, 0.63 of palm length, 5.26 times longer than deep, unarmed; ischium very slightly swollen distally, 0.42 of palm length, 5.22 times longer than distal width, unarmed; basis and coxa normal. Minor (right) second pereiopod slender, smooth, glabrous, exceeding carpocerite by chela and distal 0.75 of carpus; palm subcylindrical, slightly tapering distally, 0.59 of carapace length, 0.60 of major palm, 4.92 times longer than maximal depth; fingers 0.59 of palm length, slightly tapering distally, with strongly hooked tips and long subdistal setae, dactyl 5.65 times longer than proximal depth, with lateral flange over distal 0.60 of dactyl length, cutting edges sharp, with distal 0.71 entire, proximal 0.29 sinuous, fixed finger, with 2 very low blunt teeth at proximal 0.20 and 0.30 of cutting edge, proximal tooth larger than distal; carpus cup-like, 0.39 of palm length, 2.19 times of the distal width, unarmed; merus slightly compressed proximally, 1.04 of palm length, 6.75 of the distal width, unarmed distoventrally; ischium compressed, slightly tapering proximally, 0.68 times of palm length, 5.71 times of distal width; basis and coxa normal.

Third pereiopod exceeding carpocerite by dactyl, propod and distal 0.20 of carpus, overreaching distal end of scaphocerite by dactyl and distal 0.20 propod; dactyl short, compressed, strongly curved, 0.15 of propod length, unguis distinct, articulated, slender, 0.70 of dorsal length of corpus, corpus 2.03 times longer than proximal depth, ventral margin straight, unarmed, without distal accessory tooth, with 2 distolateral sensory setae; propod 0.62 of carapace length, uniform, 12.50 times longer than wide, with a single slender distoventral spine, spine 0.06 of propod length, 2 single spines on distal 0.13 of ventral margin, spines largely obscured by accompanying transverse rows of long ventral setae, distoventral-lateral transverse rows of long setae overreaching tip of dactyl, distodorsal margin of propod with long setae; carpus 0.47 of propod length, slightly tapering proximally, 5.45 times longer than distal width, unarmed, distodorsally produced lobe distinct; merus 1.06 of propod length, uniform, 10.34 times longer than wide, unarmed; ischium 0.46 of propod length, slightly tapering proximally, 5.04 times longer than distal width; basis and coxa without special features. Both fourth and left fifth pereiopods lost. Right fifth pereiopod similar to third, overreaching carpocerite by propod and dactyl, propod 1.22 times of third propod length.

Uropod distinctly exceeding telson, distolateral tooth of exopod just overreaching tip of telson; protopodite with posterolateral angle short, rounded; exopod 0.87 of carapace length, 3.73 times longer than maximum width, lateral margin near straight, with very small acute distal tooth, and long and slender mobile spine medially, mobile spine about 0.04 of exopod length, diaeresis distinct; endopod

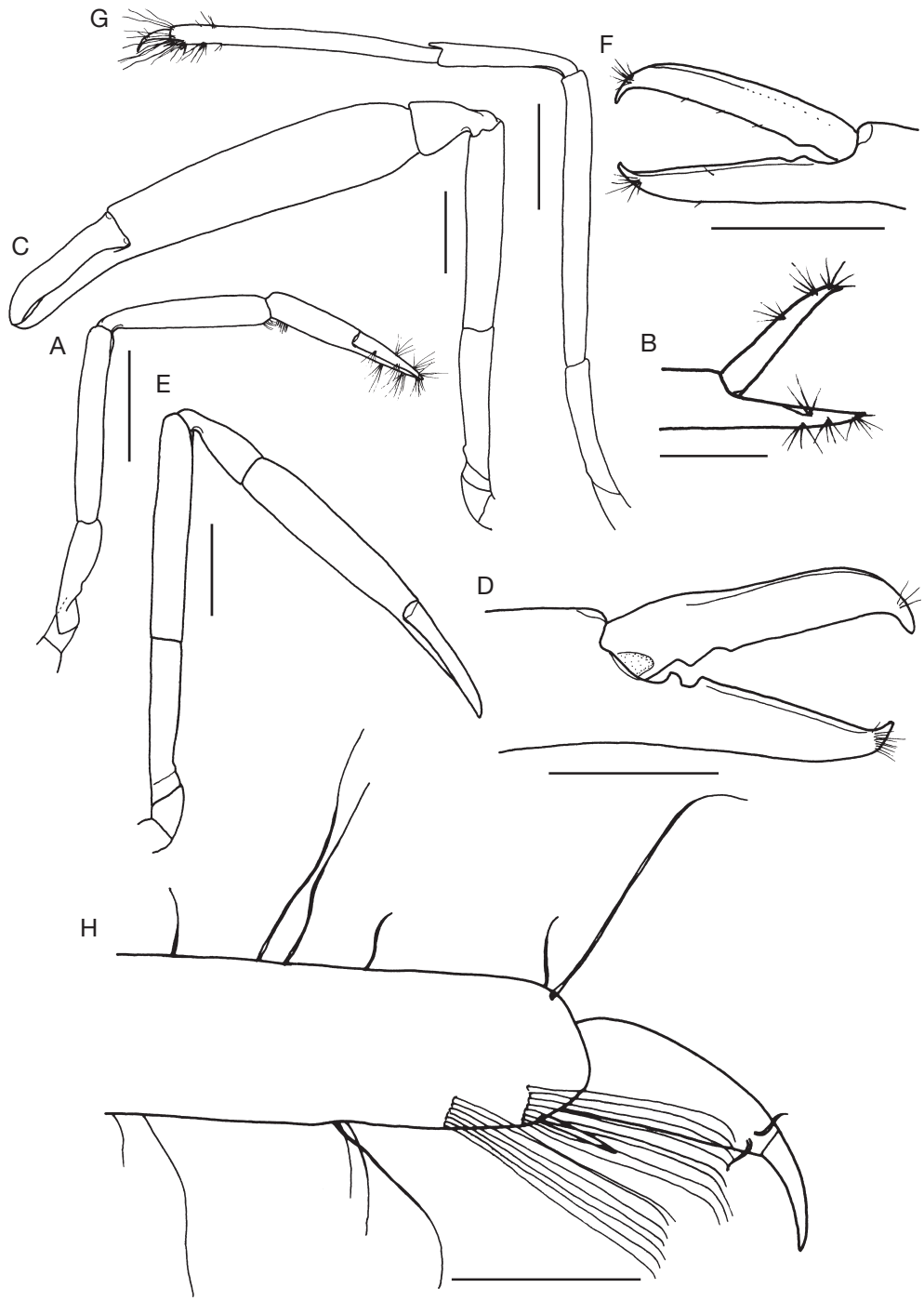

FIG. 27. — *Periclimenes vicinus* n. sp., holotype ♀ (MNHN-Na 15987): **A**, first pereiopod; **B**, same, chela; **C**, major second pereiopod; **D**, same, fingers; **E**, minor second pereiopod; **F**, same, fingers; **G**, third pereiopod; **H**, same, dactyl and distal part of propod. Scale bars: A, C-G, 1 mm; B, 0.5 mm; H, 0.25 mm.

narrow, 0.88 of exopod length, 4.09 times longer than maximum wide.

REMARKS

As the etymology above indicates, *Periclimenes vicinus* n. sp. looks very similar to *P. uniunguiculatus*, especially as concerns the pereiopods and tailfan. It can be distinguished from the latter by the noticeably long and slender hepatic spine which extends nearly to the anterior margin of the carapace, instead of distinctly distant to the anterior margin of the carapace in *P. uniunguiculatus*; the epigastric spine is widely separated from the rostral series of dorsal teeth, instead of subequal interdental between the posterior rostral series teeth in *P. uniunguiculatus*; there are only a single distoventral spine and two ventral spines which are distinctly separated from the ventral border in the third ambulatory propod, instead of a pair of distoventral spines and three ventral spines which are closely adpressed to the ventral border in *P. uniunguiculatus*; and the rostrum is horizontal, rather than slightly upcurved distally in *P. uniunguiculatus*.

Genus *Pontonides* Borradaile, 1917

Pontonides loloata Bruce, 2005 (Fig. 28)

Pontonides loloata Bruce, 2005: 367, figs 17-21.

MATERIAL EXAMINED. — **Marquesas Is.** Nuku Hiva, MUSORSTOM 9, stn CP 1177, 8°45.1'S, 140°15'W, 108-112 m, 25.VIII.1997, 1 ovig. ♀ (cl 2.29 mm) (MNHN-Na 15619).

DISTRIBUTION. — Type locality: Loloata I., Hansa Bay, Papua New Guinea. Previously also known from Japan (Izu Peninsula); 5-9 m. Not previously recorded from French Polynesia.

Pontonides has been found from shallow water less than 100 m depth. The collection depth 108-112 m of the present specimen represents the deepest bathymetric record not only for *Pontonides loloata* (reported previously from 5-9 m depth in the type locality Loloata I., Papua New Guinea [Bruce 2005], and about 30 m [S. De Grave pers. comm.]), but also for the genus.

REMARKS

The specimen agrees well with the original description and illustrations. The pterygostomian lobe of the carapace is folded inwards on both sides of the carapace, forming a semi-closed "tube", which is opened at the anterolateral margin of the carapace and extends posteriorly to the anterior fifth of the carapace length. The "mouth" of the "tube" looks like the pterygostomian notch present in *Pseudopontonides pricipes* (Criales, 1980), which is a key feature distinguishing *Pseudopontonides* from *Pontonides* (Heard 1986) and other related genera. However, when the inward folding lobe is stretched, the anterolateral margin is only slightly concave, there is no real sinus such as the pterygostomian notch in *Pseudopontonides*. *Pontonides* can be readily distinguished from another close genus *Pseudocoutierea* Holthuis, 1951 which has also the pterygostomian sinus and been known from the East Pacific, the Carribean and the Eastern Atlantic, by pleurae of the third to fifth abdominal somites being broadly rounded (vs. produced into an elongate narrow process and ending in a sharp spine in the genus *Psudocoutierea*). Recently, De Grave (2007) published a new species of the latter genus, *Pseudocoutierea dotae* De Grave, 2007, from the Carribean coast of Panama. It may easily differ from *Pontonides loloata* by the long rostrum and the rounded distolateral angle of the supraorbital eave (vs. the short rostrum and the blunt distolateral angle of the supraorbital eave in the latter), besides the different pleurae of the third to fifth abdominal somites.

A distinct antennal suture is present on the carapace below the antennal spine and extends posteriorly to the anterior fifth of the carapace length in *Pontonides loloata*. Bruce (2005) did not mention this suture in the original description and illustration. The lateral margin of the uropodal exopod only bears a minute medial mobile spine and no fixed distal tooth. The eggs are small, egg number is about 80-100, maximum egg length is 0.43 mm.

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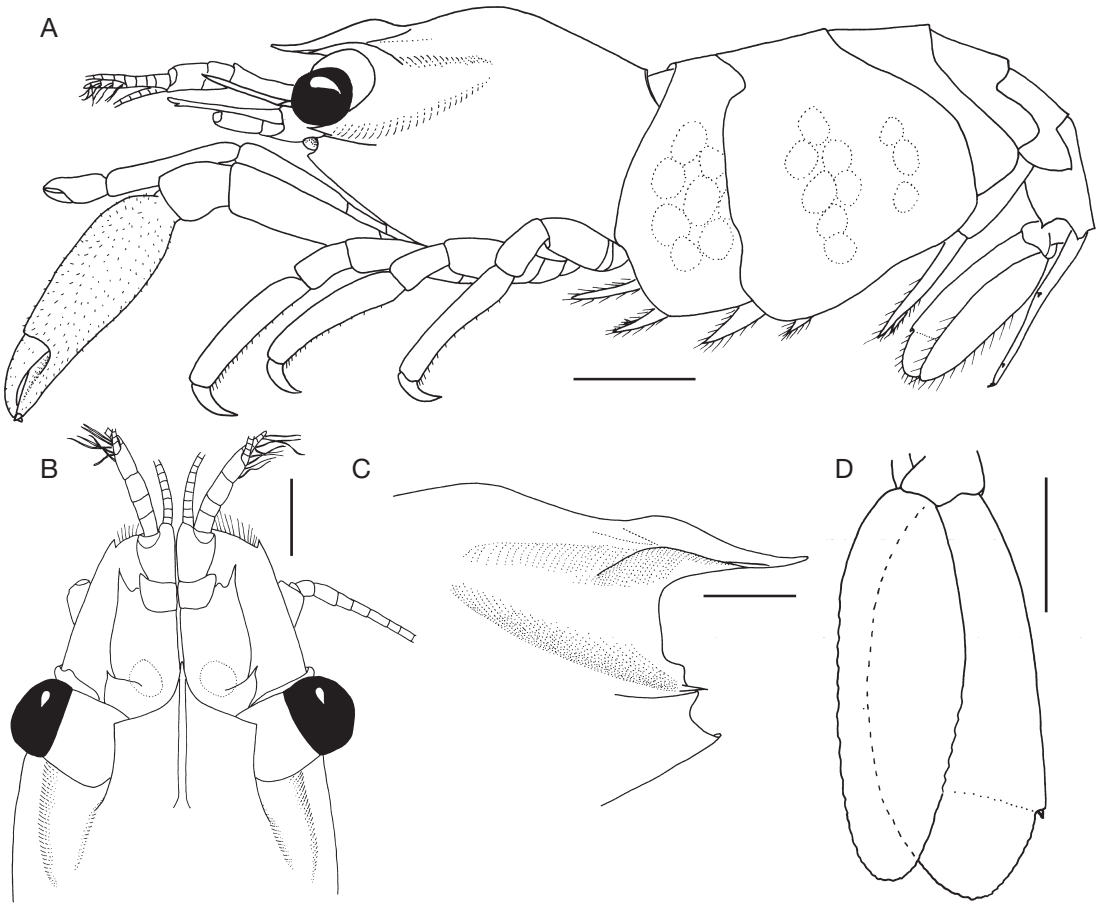

FIG. 28. — *Pontonides loloata* Bruce, 2005, ovig. ♀ (MNHN-Na 15619): **A**, body, lateral view; **B**, carapace and anterior appendages, dorsal view; **C**, anterior carapace, lateral view; **D**, uropod. Scale bars: A, 1 mm; B-D, 0.5 mm

French Polynesia expeditions, who collected part of the samples, gave me very important advices with references concerning the present research, reviewing the manuscript carefully and provided the colour photos of MNHN-Na 15617 (*Izucaris crosnieri*) and 15982 (*Periclimenes aleator*); A. J. Bruce and S. De Grave for kindly carefully reviewing and giving many important comments on the manuscript. Special thanks are due to Danielle Defaye (MNHN), who invited me to visit the Paris Museum in the summer of 2005; Régis Cleva (MNHN), who helped me to sort some material for this study; Charles H. J. M. Fransen (Leiden), for reviewing the manuscript and providing the specimen information of the *Periclimenaeus orbitocarinatus* Fransen, 2006; and my wife, Li Zhang, who helped me to improve the digital version of some illustrations. This study was partly supported by the Knowledge Innovation Program of the Chinese Academy of Sciences (IOCAS No. O72715) and the National Natural Science Foundation of China (No. 40676088).

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