

## **Galatheidae (Crustacea, Decapoda) from the Austral Islands, Central Pacific**

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### ABSTRACT

During the cruise BENTHAUS (November 2002) to the Austral Archipelago (French Polynesia), numerous specimens of galatheids belonging to the genera *Agononida* Baba & de Saint Laurent, 1996, *Munida* Leach, 1820, *Paramunida* Baba, 1988 and *Raymunida* Macpherson & Machordom, 2000 were collected. The present collection comprises four *Agononida* species, 26 *Munida*, two *Paramunida* and one *Raymunida*. A new genus, *Setanida*, is described. The specimens from BENTHAUS cruise were caught in 68 stations between 50 and 1300 m. Additional material from French Polynesia has also been considered. The collection contains 17 new species: *Agononida aequabilis*, *A. imitata*, *A. simillima*, *Munida antliae*, *M. apheles*, *M. arae*, *M. columbae*, *M. descensa*, *M. erugata*, *M. fasciata*, *M. fornacis*, *M. ignea*, *M. llenasi*, *M. oblonga*, *Paramunida spatula*, *Raymunida limbata* and *Setanida cristata*.

### RÉSUMÉ

#### **Galatheidae (Crustacea, Decapoda) des Îles Australes, Pacifique Central.**

Lors de la campagne BENTHAUS (novembre 2002) aux Îles Australes (Polynésie Française), de nombreux Galathéides appartenant aux genres *Agononida* Baba & de Saint Laurent, 1996, *Munida* Leach, 1820, *Paramunida* Baba, 1988 et *Raymunida* Macpherson & Machordom, 2000 ont été récoltés. La collection étudiée ici comprend 4 espèces d'*Agononida*, 26 *Munida*, deux *Paramunida* et une *Raymunida*. Un nouveau genre, *Setanida*, est décrit. Les spécimens provenant de la campagne BENTHAUS ont été récoltés dans 68 stations différentes, entre 50 et 1300 m. Des spécimens additionnels capturés en Polynésie Française ont également été étudiés. La collection comprend 17 nouvelles espèces: *Agononida aequabilis*, *A. imitata*, *A. simillima*, *Munida antliae*, *M. apheles*, *M. arae*, *M. columbae*, *M. descensa*, *M. erugata*, *M. fasciata*, *M. fornacis*, *M. ignea*, *M. llenasi*, *M. oblonga*, *Paramunida spatula*, *Raymunida limbata* et *Setanida cristata*.

## INTRODUCTION

During 2002 the cruise BENTHAUS, carried out in the Austral Islands, numerous representatives of the genera *Agononida* Baba & de Saint Laurent, 1996, *Munida* Leach, 1820, *Paramunida* Baba, 1988 and *Raymunida* Macpherson & Machordom, 2000 were collected. The study of these specimens revealed the presence of four species of *Agononida*, 26 of *Munida*, two of *Paramunida*, one of *Raymunida* and one of *Setanida* n. gen. Seventeen species are described as new.

Previous works on these genera of Galatheididae from French Polynesia are very scarce, although the radiobiologic survey carried out by vessel "Marara" (Macpherson & de Saint Laurent 1991; Poupin 1996) and the cruise MUSORSTOM 9 to the Marquesas Islands (Macpherson 2000), collected some interesting new species. At present, these species are clearly differentiated from the galatheid fauna of adjacent waters, e.g. New Caledonia (Macpherson 1994), Fiji and Tonga (Macpherson 2004), eastern Pacific (Hendrickx 2003), see also Baba (2005). The present study confirms this difference and the existence of a rich fauna, demonstrating that the study of these genera of decapods is far from complete.

All the materials including types of the new species are deposited in the collections of the Muséum national d'Histoire naturelle, Paris. Measurements given are of carapace length, excluding rostrum, and the terminology used mainly follows previous papers (Zariquey Alvarez 1952; Macpherson 1994; Baba & de Saint Laurent 1996).

STATIONS OF "BENTHAUS" AT WHICH GALATHEIDS WERE COLLECTED  
AND THE SPECIES OBTAINED AT EACH STATION

The abbreviations of the gears used are: DW: Warén dredge; CC: Otter trawl; CP: Beam trawl; CAS: Trap; (see also <http://decapoda.free.fr/benthaus.php>).

- Stn DW 1863. — 2.11.2002, 27°39.14'S, 144°15.83'W, 650-684 m: *A. simillima*.  
 Stn DW 1869. — 4.11.2002, 28°58.4'S, 140°15.4'W, 240-440 m: *M. erugata*.  
 Stn DW 1876. — 4.11.2002, 28°58.85'S, 140°14.70'W, 150-160 m: *M. ignea*.  
 Stn DW 1881. — 6.11.2002, 27°54.6'S, 143°28.5'W, 112-121 m: *M. apheles*, *M. evarne*, *M. ignea*, *M. llenasi*, *M. longicheles*.  
 Stn DW 1884. — 6.11.2002, 27°53.75'S, 143°32.9'W, 570-620 m: *M. alonsoi*.  
 Stn DW 1885. — 6.11.2002, 27°51.87'S, 143°32.59'W, 700-800 m: *M. amathea*.  
 Stn DW 1886. — 6.11.2002, 27°51.27'S, 143°32.39'W, 620-1000 m: *A. simillima*, *M. apheles*, *M. rubrovata*.  
 Stn DW 1887. — 6.11.2002, 27°51.59'S, 143°32.68'W, 750-1000 m: *M. oblonga*.  
 Stn DW 1888. — 6.11.2002, 27°51.38'S, 143°31.42'W, 100-120 m: *M. evarne*, *R. limbata*.  
 Stn DW 1889. — 7.11.2002, 27°36.87'S, 144°15.75'W, 600-620 m: *A. simillima*, *M. amathea*.  
 Stn CP 1891. — 7.11.2002, 27°37.09'S, 144°15.42'W, 800-850 m: *M. amathea*.  
 Stn CP 1892. — 7.11.2002, 27°38.83'S, 144°15.62'W, 742-1000 m: *M. amathea*, *M. oblonga*, *M. profunda*.  
 Stn DW 1897. — 8.11.2002, 27°34.27'S, 144°26.68'W, 480-700 m: *M. alonsoi*, *P. spatula*.  
 Stn DW 1898. — 8.11.2002, 27°34.29'S, 144°26.65'W, 580-820 m: *M. alonsoi*, *M. antliae*.  
 Stn DW 1902. — 9.11.2002, 27°26.07'S, 144°03.05'W, 200-250 m: *A. simillima*.  
 Stn CP 1909. — 10.11.2002, 27°38.63'S, 144°15.61'W, 783-1000 m: *M. amathea*, *M. profunda*.  
 Stn CP 1910. — 10.11.2002, 27°38.17'S, 144°15.42'W, 840-1200 m: *M. amathea*, *M. columbae*, *M. profunda*, *M. typhle*.  
 Stn CP 1911. — 10.11.2002, 27°37.94'S, 144°15.23'W, 900-1300 m: *M. profunda*, *M. typhle*.  
 Stn DW 1914. — 11.11.2002, 27°03.52'S, 146°04.01'W, 150 m: *M. apheles*.  
 Stn CP 1920. — 12.11.2002, 27°03.58'S, 146°03.84'W, 120-203 m: *M. llenasi*, *S. cristata*.  
 Stn CP 1921. — 12.11.2002, 27°03.76'S, 146°03.81'W, 150-160 m: *M. apheles*, *S. cristata*.  
 Stn CP 1922. — 12.11.2002, 27°03.67'S, 146°03.93'W, 150-163 m: *M. llenasi*, *M. plexaura*, *S. cristata*.  
 Stn DW 1926. — 13.11.2002, 24°38.16'S, 146°00.82'W, 50-90 m: *M. evarne*.  
 Stn DW 1927. — 13.11.2002, 24°39.03'S, 146°01.58'W, 95-105 m: *M. evarne*, *R. limbata*.

- Stn DW 1936. — 14.11.2002, 24°39.71'S, 145°57.09'W, 80-100 m: *M. evarne*, *M. llenasi*, *R. limbata*.
- Stn DW 1939. — 15.11.2002, 23°49.67'S, 147°41.62'W, 100 m: *R. limbata*.
- Stn DW 1940. — 15.11.2002, 23°49.28'S, 147°41.45'W, 100-460 m: *M. plexaura*.
- Stn DW 1941. — 15.11.2002, 23°49.05'S, 147°41.6'W, 290-620 m: *M. alonsoi*, *M. fasciata*.
- Stn DW 1945. — 17.11.2002, 23°49.05'S, 147°41.57'W, 120-500 m: *M. alonsoi*, *M. longicheles*.
- Stn DW 1946. — 17.11.2002, 23°49.24'S, 147°41.25'W, 100-200 m: *M. evarne*, *M. llenasi*, *R. limbata*.
- Stn DW 1947. — 17.11.2002, 23°48.51'S, 147°53.47'W, 120-150 m: *M. evarne*, *M. llenasi*.
- Stn DW 1948. — 17.11.2002, 23°48.7'S, 147°53.5'W, 120-280 m: *M. llenasi*.
- Stn DW 1951. — 17.11.2002, 23°49.08'S, 147°53.38'W, 206-450 m: *M. llenasi*, *M. pasithea*.
- Stn DW 1956. — 18.11.2002, 23°18.42'S, 149°26.96'W, 600-990 m: *M. amathea*, *M. antliae*, *M. profunda*.
- Stn DW 1957. — 18.11.2002, 23°18.8'S, 149°29.34'W, 558-1000 m: *M. amathea*.
- Stn DW 1958. — 18.11.2002, 23°19.64'S, 149°30.3'W, 80-150 m: *M. evarne*, *M. llenasi*, *M. profunda*.
- Stn DW 1959. — 18.11.2002, 23°19.77'S, 149°30.44'W, 95-380 m: *M. evarne*.
- Stn DW 1962. — 19.11.2002, 23°20.82'S, 149°33.38'W, 470-800 m: *A. imitata*, *M. antliae*.
- Stn CP 1965. — 19.11.2002, 23°21.35'S, 149°33.92'W, 500-1200 m: *M. alonsoi*, *M. amathea*, *M. antliae*, *M. fasciata*, *M. leptitis*, *M. longicheles*, *M. typhle*.
- Stn CP 1966. — 19.11.2002, 23°21.27'S, 149°34.05'W, 636-1200 m: *M. columbae*, *M. profunda*.
- Stn CP 1967. — 19.11.2002, 23°21.44'S, 149°34.25'W, 600-1200 m: *M. amathea*, *M. profunda*.
- Stn DW 1968. — 20.11.2002, 23°22.88'S, 150°43.52'W, 100-120 m: *M. apheles*, *M. evarne*, *M. ignea*.
- Stn DW 1970. — 20.11.2002, 23°21.99'S, 150°43.23'W, 350-401 m: *M. leptitis*, *M. longicheles*.
- Stn DW 1972. — 20.11.2002, 23°21.96'S, 150°42.87'W, 500-1020 m: *M. profunda*.
- Stn DW 1973. — 20.11.2002, 23°23.49'S, 150°43.87'W, 200-350 m: *M. erugata*, *M. ocellata*, *P. pictura*.
- Stn DW 1974. — 20.11.2002, 23°23.93'S, 150°43.93'W, 450-618 m: *A. simillima*.
- Stn DW 1978. — 21.11.2002, 23°22.02'S, 150°43.41'W, 120-180 m: *M. evarne*, *M. ignea*.
- Stn DW 1979. — 21.11.2002, 23°21.74'S, 150°43.87'W, 176-340 m: *M. ignea*, *M. llenasi*.
- Stn DW 1983. — 21.11.2002, 23°25.65'S, 150°44.29'W, 300-540 m: *M. distiza*, *M. longicheles*, *M. plexaura*.
- Stn DW 1985. — 21.11.2002, 23°26.35'S, 150°44.22'W, 100-107 m: *M. evarne*, *M. llenasi*, *R. limbata*.
- Stn DW 1986. — 21.11.2002, 23°26.3'S, 150°44.2'W, 150 m: *M. evarne*, *M. fornacis*, *M. llenasi*, *M. pasithea*, *R. limbata*.
- Stn DW 1991. — 22.11.2002, 22°36.21'S, 150°00.25'W, 470-780 m: *M. amathea*.
- Stn DW 1994. — 22.11.2002, 22°34.82'S, 151°01.14'W, 869-884 m: *M. profunda*.
- Stn DW 1995. — 23.11.2002, 22°28.96'S, 151°21.85'W, 212-450 m: *M. amathea*, *M. longicheles*, *P. pictura*.
- Stn DW 1996. — 23.11.2002, 22°29.06'S, 151°21.93'W, 489-1050 m: *M. amathea*, *M. fasciata*.
- Stn DW 1998. — 23.11.2002, 22°24.81'S, 151°22.17'W, 250-302 m: *M. alonsoi*, *M. arae*, *M. descensa*.
- Stn DW 1999. — 23.11.2002, 22°25.12'S, 151°22.15'W, 270-500 m: *M. plexaura*, *M. rubrovata*, *P. pictura*.
- Stn DW 2000. — 23.11.2002, 22°25.11'S, 151°21.88'W, 270-480 m: *M. longicheles*.
- Stn DW 2001. — 23.11.2002, 22°26.59'S, 151°20.12'W, 200-550 m: *M. fasciata*, *M. polynoe*.
- Stn DW 2004. — 24.11.2002, 22°27.72'S, 151°18.7'W, 430-850 m: *M. amathea*.
- Stn DW 2006. — 24.11.2002, 22°26.78'S, 151°18.60'W, 350-450 m: *M. descensa*, *M. ocellata*, *M. plexaura*.
- Stn CA 2008. — 24.11.2002, 22°27.06'S, 151°18.88'W, 280-300 m: *M. distiza*, *M. hystrix*.
- Stn DW 2009. — 24.11.2002, 22°31.98'S, 151°19.85'W, 320-450 m: *M. alonsoi*, *M. longicheles*.
- Stn DW 2010. — 24.11.2002, 22°32.36'S, 151°20.84'W, 520-950 m: *M. amathea*, *M. antliae*.
- Stn DW 2013. — 25.11.2002, 22°38.57'S, 152°49.73'W, 80-93 m: *M. evarne*, *R. limbata*.
- Stn DW 2015. — 25.11.2002, 22°38.16'S, 152°49.55'W, 250-280 m: *M. longicheles*.
- Stn DW 2017. — 25.11.2002, 22°37.90'S, 152°49.89'W, 650-675 m: *M. amathea*.

## SYSTEMATIC ACCOUNT

Family GALATHEIDAE Samouelle, 1819

Genus **AGONONIDA** Baba & de Saint Laurent, 1996

***Agononida aequabilis*** n. sp.

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Fig. 1

*Munida* sp. cf. *pilosimanus* Poupin, 1996: 24, pl. 11, fig. e.

MATERIAL EXAMINED. — (holotype and paratypes). Society Archipelago. Moorea Island. Stn 258, 18.06.1990, 17°31.9'S, 149°35.3'W, 430 m: 1 ♂ 25.8 mm; holotype ov. ♀ 23.4 mm (MNHN Ga 5278).  
Society Archipelago. Bellingshausen Island. Stn 176, 10.08.1989, 16°47'S, 153°55.8'W, 500 m: 1 ♂ (broken).

ETYMOLOGY. — From the Latin, *equal*, like, in reference to the similarity with *A. pilosimanus*.

DESCRIPTION. — Carapace as long as wide. Transverse ridges usually interrupted in cardiac and branchial regions, with very short, non-iridescent setae and few long setae scattered on cardiac and branchial regions. Gastric region with 2 well developed epigastric spines; 1 well developed parahepatic spine on each side. Line of 3 branchiocardiac spines on each side. Posterior border of carapace unarmed. Frontal margins slightly oblique. Lateral margins slightly convex. Anterolateral spine strong, at anterolateral angle, reaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove 0.25 preceding spine. Branchial margins with 4 spines. Rostrum spiniform, half as long as remaining carapace, straight and horizontal. Supraocular spines clearly overreaching midlength of rostrum and exceeding end of corneas, slightly divergent, directed slightly upwards (Fig. 1A).

Thoracic sternites with numerous short striae. Anterior part of fourth sternite slightly narrower than third; whole posterior margin of third sternite contiguous with fourth sternite. Transverse ridges between fifth, sixth and seventh sternites obtuse, feebly granulated (Fig. 1B).

Second to fourth abdominal somites with 4 spines (rarely 5) on anterior ridge, with some transverse striae and scales. Posterior ridge of fourth abdominal somite unarmed.

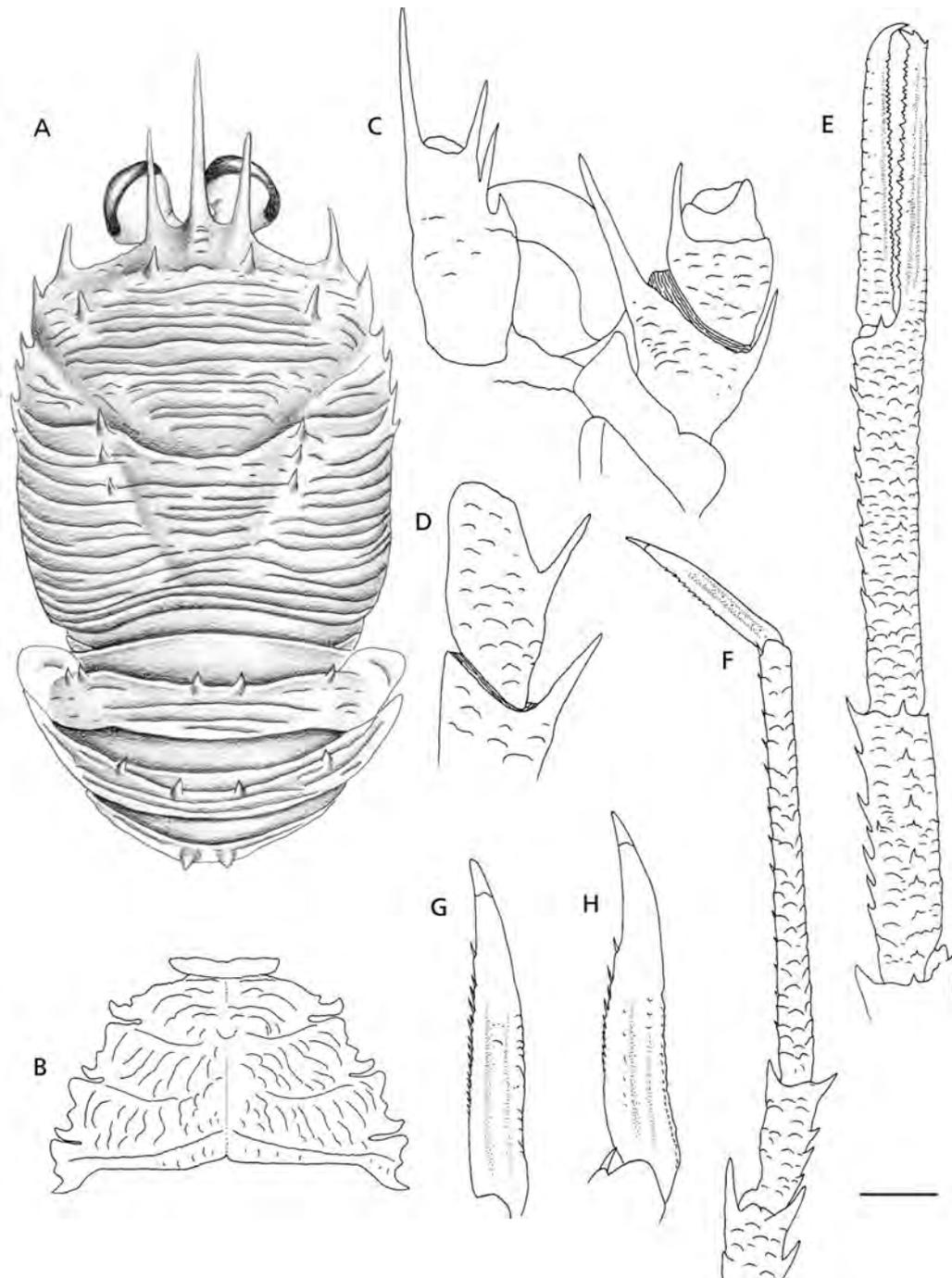
Eyes large, maximum corneal diameter 0.3 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded), about 0.3 carapace length, elongate, slightly overreaching corneas, with 2 distal spines, mesial spine clearly longer than lateral spine; with 2 spines on lateral margin, proximal spine short, distal spine moderately long (Fig. 1C).

First segment of antennal peduncle with stout distomesial process not reaching end of second segment; second segment with 2 distal spines, mesial spine longer than lateral spine, exceeding antennal peduncle; third segment with mesiodistal spine exceeding antennal peduncle (Fig. 1C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing long spine. Merus with 1 well developed median spine on flexor margin; extensor margin unarmed (Fig. 1D).

Chelipeds subequal, squamous, with few uniramous setae on mesial borders of merus and carpus, about 4-4.5 times carapace length; merus clearly longer than carapace length, carpus 4 times longer than high and three-fourths palm length, palm 0.6 times merus length, 1.2 times longer than fingers. Merus armed with row of spines, on mesial, ventral and dorsal borders. Carpus and palm with row of spines on mesial margin, some spines on dorsal side. Fingers unarmed, except subterminal spines, with longitudinal carina on each side, distally curving and crossing, ending in a sharp point (Fig. 1E).



**FIG. 1.** *Agononida aequabilis* n. sp., ov. ♀ 23.4 mm, holotype from Stn 258, Moorea Island: A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular peduncles and antennae; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, left first walking leg, lateral view; G, dactylus of left first walking leg, lateral view; H, *A. pilosimanus* Baba, 1969, ♂ 25.4 mm, Taiwan, 350 m, dactylus of left first walking leg, lateral view. Scale bars: A, B, E, F = 5 mm; C, D, G, H = 2 mm.

**FIG. 1.** *Agononida aequabilis* n. sp., ov. ♀ 23,4 mm, holotype, Stn 258, Île de Moorea : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélipède droit, vue dorsale ; F, première patte marcheuse gauche, vue latérale ; G, dactyle de la première patte marcheuse gauche, vue latérale ; H, *A. pilosimanus* Baba, 1969, ♂ 25,4 mm, Taiwan, 350 m, dactyle de la première patte marcheuse gauche, vue latérale. Échelles : A, B, E, F = 5 mm ; C, D, G, H = 2 mm.

Second pereopod about 3.2 times carapace length; merus 1.5 times longer than carapace, about 9 times as long as high, about 4 times carpus length and 1.3 times as long as propodus; propodus 12 times as long as high, about 2.4 times dactylus length (Fig. 1E). Merus with dorsal marginal spines increasing in size distally, some spines along distal part of ventral margin. Carpus with strong distomesial and distoventral spine, some small spines along dorsal margin. Propodus with 12-13 movable ventral spinules. Dactylus slightly curving distally, ventral margin straight, with 17-18 movable small spinules, proximal and distal fourth unarmed (Fig. 1F). Third pereopod similar to second; fourth pereopod slightly shorter than second and third.

REMARKS. — The new species closely resembles *Agononida pilosimanus* (Baba, 1969) from Japan, Sulu Archipelago, Taiwan and off Central Queensland, between 250 and 582 m (Baba 1969, 1988, 1994; Wu *et al.* 1997). Both species have three postcervical spines and two spines on the posterior-most transverse ridge of the carapace, the posterior ridge of the fourth abdominal somite unarmed, and the first antennal segment with a moderate-sized process.

The two species may distinguished from each other as follows:

The parahepatic spines of the carapace are clearly larger in the new species than in *A. pilosimanus*.

The ventral margin of the dactylus of the walking legs is convex in *A. plisominanus*, whereas this margin is straight in the new species.

The propodus of the walking legs is 3 times longer than the dactylus in *A. pilosimanus*, whereas this ratio is 2.4 in *A. aequabilis*.

DISTRIBUTION. — Only known from French Polynesia, 430-500 m.

### ***Agononida imitata*** n. sp.

Fig. 2

*Munida* sp. cf. *solae* Poupin, 1996: 24, pl. 11f.

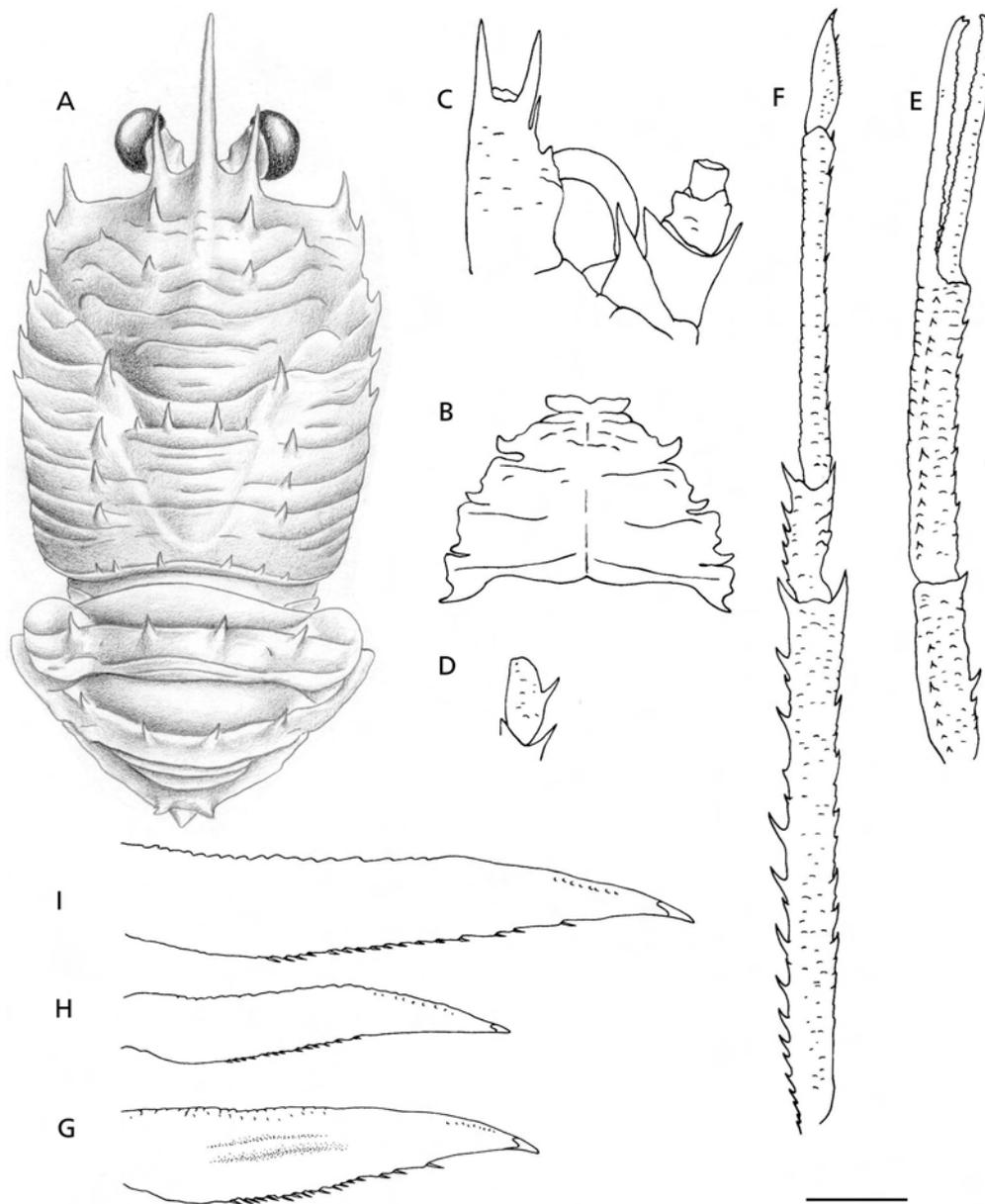
TYPE MATERIAL. — (holotype and paratypes). Tubuai Archipelago. Rimitara Island. 03.09.1988, 600 m: 1 ♀ 22.2 mm. Austral Archipelago. Maria Island. Stn 422. 07.08.1991, 21°47.9'S, 154°43.8'W, 680 m: 1 ♀ 18.1 mm. Austral Archipelago. BENTHAUS. Stn DW 1962, 470-800 m: holotype 1 ♂ 26.7 mm (MNHN Ga 5279).

ETYMOLOGY. — From the Latin, *imitatus*, copy, mimic, in reference to resemblance with *A. soelae*.

DESCRIPTION. — Carapace as long as wide. Transverse ridges usually interrupted, with very short, non-iridescent setae and few long setae scattered on cardiac and branchial regions. Gastric region with 2 well developed epigastric spines, followed by 2 protogastric spines, 1 parahepatic spine on each side. Cardiac region well-circumscribed, with transverse row of 2-4 small spines; with line of 4-6 branchiocardiac spines either side of cardiac spines. Posterior border of carapace with 5-10 spines. Frontal margins transverse. Lateral margins moderately convex. Anterolateral spine strong, at anterolateral angle, overreaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove 0.3 smaller than preceding anterolateral spine. Branchial margins with 2 spines. Rostrum spiniform, less than half as long as remaining carapace, straight and horizontal. Supraocular spines clearly overreaching midlength of rostrum and slightly exceeding end of corneas, subparallel, directed slightly upwards (Fig. 2A).

Thoracic sternites smooth, with few short striae on fourth sternite. Anterior part of fourth sternite slightly narrower than third; whole posterior margin of third sternite contiguous with fourth sternite. Transverse ridges between fifth, sixth and seventh sternites obtuse, feebly granulated (Fig. 2B).

Second to fourth abdominal somites with 4 spines on anterior ridge, with some transverse striae and scales. Posterior ridge of fourth abdominal somite with median spine.



**FIG. 2.** *Agononida imitata* n. sp., ♂ 26.7 mm, holotype from Stn 1962, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, left cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view; H, *A. procera* Ah Yong & Poore, 2004, ♀ 14.8 mm, from Fiji, stn 1484, dactylus of right first walking leg, lateral view; I, *A. soelae* Baba, 1986, ♂ 19.0 mm, from Indonesia, Stn 57 (KARUBAR), dactylus of right first walking leg, lateral view. Scale bars: A = 7.5 mm; E, F = 5 mm; C, B, D = 2 mm; G, H, I = 1 mm.

**FIG. 2.** *Agononida imitata* n. sp., ♂ 26,7 mm, holotype, Stn 1962, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélopède gauche, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale ; H, *A. procera* Ah Yong & Poore, 2004, ♀ 14,8 mm, de Fiji, stn 1484, dactyle de la première patte marcheuse droite, vue latérale ; I, *A. soelae* Baba, 1986, ♂ 19,0 mm, d'Indonésie, Stn 57 (KARUBAR), dactyle de la première patte marcheuse, vue latérale. Echelles : A = 7,5 mm ; E, F = 5 mm ; C, B, D = 2 mm ; G, H, I = 1 mm.

Eyes of medium size, maximum corneal diameter 0.3 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded), about 0.3 carapace length, elongate, slightly overreaching corneae, with 2 distal spines, mesial spine slightly overreaching lateral spine; with 2 spines on lateral margin, proximal spine short, distal spine longer, not reaching end of distal spine (Fig. 2C).

First segment of antennal peduncle with distomesial spine slightly overreaching end of second segment; second segment with 2 distal spines, mesial spine stouter than lateral spine, not reaching end of penultimate segment; third segment unarmed (Fig. 2C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing long spine. Merus of third maxilliped with one well developed median spine on flexor margin; extensor margin unarmed (Fig. 2D).

Chelipeds subequal, squamous, with few uniramous setae on mesial borders of merus and carpus; merus nearly 1.5 times carapace length, carpus 4.5 times longer than high and 0.6 palm length, palm slightly longer than fingers. Merus armed with row of spines on mesial, ventral and dorsal borders. Carpus and palm with row of spines on mesial margin, some spines on dorsal side. Fingers unarmed, with longitudinal carina on each side, distally curving and crossing, ending in a sharp point (Fig. 2E).

Second pereopod about 3 times carapace length; merus 1.4 times longer than carapace, about 10 times as long as high, 5 times carpus length and 1.5 times as long as propodus; propodus 12 times as long as high, about 3 times dactylus length (Fig. 2E). Merus with dorsal marginal spines increasing in size distally, some spines along distal part of ventral margin. Carpus with 1 distomesial and distoventral spine, some small spines along dorsal margin. Propodus with 8-10 movable ventral spinules. Dactylus with dorsal margin slightly convex, slightly curving distally, with 14-19 movable small spinules along ventral margin, proximal and distal portions unarmed (Fig. 2F). Third pereopod similar to second; fourth pereopod slightly shorter than second and third.

*Colour.* Ground colour of carapace and abdomen orange; rostrum and supraocular spines orange. Chelipeds and walking legs with transverse orange and whitish bands.

REMARKS. — *Agononida imitata* resembles *A. soelae* (Baba 1986b) from Japan, Taiwan, Indonesia and northwestern Australia, known between 501 and 605 m and *A. procera* Ahyong & Poore, 2004 from eastern Australia at 675-824 m (Ahyong & Poore 2004; Baba 2005). The three species have a pair of protogastric spines behind the epigastric spines, a row of branchiocardiac spines on each side, a transverse row of cardiac spines, spines on the posterior-most transverse ridge of the carapace, the posterior ridge of the fourth abdominal somite with a median spine on the posterior transverse ridge and the first antennal segment with a moderate-sized process.

The new species may be distinctive as follows:

The palm of the chelipeds is slightly longer than the fingers in *A. imitata*, whereas this ratio is 2 in *A. procera* and 1.3 in *A. soelae*.

The propodus of the walking legs is 12 times as long as high in the new species and *A. soelae*, whereas it is 18-19 times in *A. procera*. The propodus is 3 times the dactylus length in *A. imitata* and *A. procera*, whereas it is 2 times in *A. soelae*.

The ventral margin of the dactylus of the walking legs is unarmed on the distal fourth in *A. procera* and *A. imitata*, whereas this margin is unarmed on the distal third in *A. soelae*.

DISTRIBUTION. — Only known from French Polynesia, 470-800 m.

***Agononida normani*** (Henderson, 1885)

Fig. 3

*Munida Normani* Henderson, 1885: 408.*Munida normani* Henderson, 1888: 129, pl. 13, fig. 5. — Macpherson 1994: 500 (examination of types).*Agononida normani* – Macpherson 2004: 244. — Baba 2005: 234 (key), 235 (list and references).

MATERIAL EXAMINED. — Society Archipelago. Moorea Island. Tuamotu Archipelago. Mururoa Island. Stn 387, 11.03.1991, Stn D27, 19.06.1990, 17°33.5'S, 149°54.2'W, 512 m: 1 ♂ 12.5 mm; 1 ov. ♂ 13.7 mm. 21°51.8'S, 138°46.8'W, 630 m: 1 ♀ 18.4 mm.

OTHER MATERIAL EXAMINED. — Tonga. BORDAU 2. Stn 1557, 578 m: 1 ♂ 11.7 mm. — Stn 1558, 580-593 m: 2 ♂ 14.4-14.5 mm, 2 ov. ♀ 11.8-14.0 mm (see Macpherson 2004).

DESCRIPTION. — Carapace as long as wide. Transverse ridges usually interrupted in cardiac and branchial regions, with very short, non-iridescent setae and some long setae scattered on cardiac and branchial regions. Gastric region with 2 well developed epigastric spines. Cardiac region with transverse row of 2-5 small spines (rarely absent); with line of 3-5 branchiocardiac spines on each side of cardiac region. Posterior border of carapace with 1-2 median spines (rarely absent). Frontal margins transverse. Lateral margins moderately convex. Anterolateral spine strong, at anterolateral angle, slightly overreaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove 0.25 length of preceding spine. Branchial margins with 4 spines. Rostrum spiniform, about 0.3 as long as remaining carapace, straight and horizontal. Supraocular spines clearly overreaching midlength of rostrum and not exceeding end of corneas, slightly divergent, directed slightly upwards (Fig. 3A).

Thoracic sternites smooth, with few short striae on fourth sternite. Anterior part of fourth sternite slightly narrower than third; whole posterior margin of third sternite contiguous with fourth sternite. Transverse ridges between fifth, sixth and seventh sternites obtuse, feebly granulated (Fig. 3B).

Second to fourth abdominal somites with 4 median spines on anterior ridge, with some transverse striae and scales. Posterior ridge of fourth abdominal somite with median spine.

Eyes large, maximum corneal diameter half distance between bases of anterolateral spines.

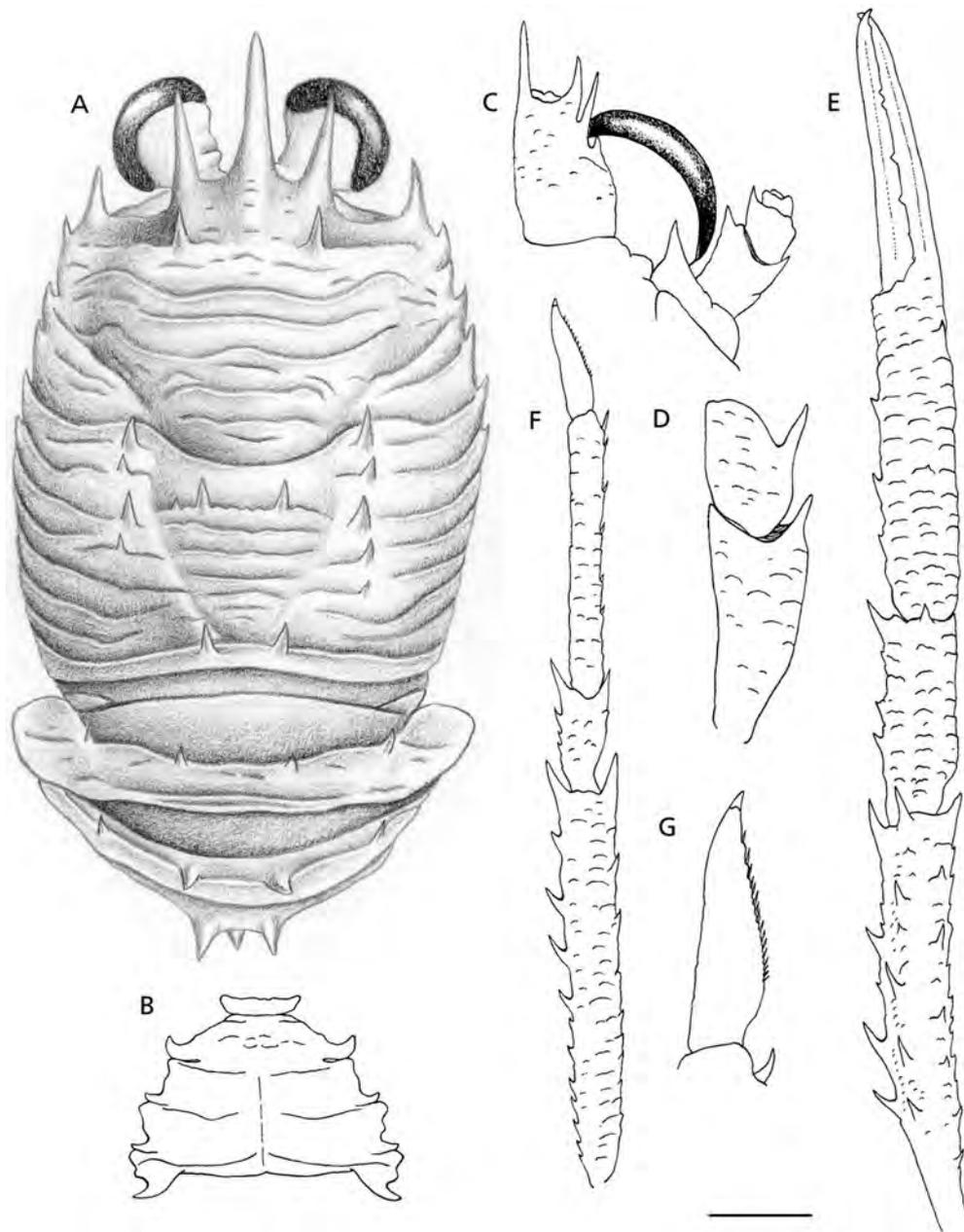
Basal segment of antennule (distal spines excluded), about 0.3 carapace length, elongate, slightly overreaching corneae, with 2 distal spines, mesial spine clearly longer than lateral spine; with 2 spines on lateral margin, proximal spine short, distal spine long (Fig. 3C).

First segment of antennal peduncle with stout distomesial process nearly reaching end of second segment; second segment with 2 distal spines, mesial spine slightly longer than lateral spine, not reaching end of penultimate segment; third segment with mesiodistal spine (Fig. 3C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing long spine. Merus of third maxilliped with one well developed median spine on flexor margin; extensor margin unarmed (Fig. 3D).

Chelipeds subequal, squamous, with few uniramous setae on mesial borders of merus and carpus, about 3.5 times carapace length; merus slightly longer than carapace length, carpus 3 times longer than high and 0.6 palm length, palm 0.8 times merus length, slightly longer than fingers. Merus armed with row of spines on mesial, ventral and dorsal borders. Carpus and palm with row of spines on mesial side, some spines on lateral border. Fingers unarmed, with longitudinal carina on each side, distally curving and crossing, ending in a sharp point (Fig. 3E).

Second pereopod about 2.5 times carapace length; merus 1.2 times longer than carapace, about 7 times as long as high, about 4 times carpus length and 1.5 times as long as propodus; propodus 8 times as long as high, about 2.3 times dactylus length (Fig. 3E). Merus with dorsal marginal spines increasing in size distally, some spines along distal part of ventral margin. Carpus with strong distomesial and distoventral spine, some small spines along dorsal margin. Propodus with 6-8



**FIG. 3.** *Agononida normani* (Henderson 1885), ♂ 14.4 mm, from Stn 1558, Tonga, (BORDAU 2): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A = 8 mm; B, E, F = 5 mm; C, D, G = 2 mm.

**FIG. 3.** *Agononida normani* (Henderson 1885), ♂ 14,4 mm, Stn 1558, Tonga, (BORDAU 2) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélopède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale. Échelles : A = 8 mm ; B, E, F = 5 mm ; C, D, G = 2 mm.

movable ventral spinules. Dactylus with dorsal margin straight, slightly curving distally, ventral margin with 14-17 movable small spinules nearly reaching end of dactylus, proximal third unarmed (Fig. 3F). Third pereopod similar to second; fourth pereopod slightly shorter than second and third.

REMARKS. — The material examined agrees quite well with the type material and additional specimens collected in adjacent waters (Macpherson 1994, 2004). The species is closely related to *Agononida simillima* n. sp. (see below).

DISTRIBUTION. — Previously known from Fiji (type locality), Tonga, New Caledonia, Wallis and Futuna and Vanuatu, 320-668 m (Macpherson 2004; Baba 2005 and references). The present material was collected in Tuamotu and Society Islands, 512-630 m.

***Agononida simillima* n. sp.**

Fig. 4

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. Rapa Island. Stn 463, 20.03.95, 27°35'S, 144°16.3'W, 510 m: 1 ♂ 13.5 mm. BENTHAUS. — Stn DW 1863, 650-684 m: holotype ♀ 11.0 mm (MNHN Ga 5280), 1 ♂ 13.0 mm, 2 ♀ 11.7-14.6 mm. — Stn DW 1886, 620-1000 m: 1 juv. 4.5 mm. — Stn DW 1889, 600-620 m: 1 ♂ 12.4 mm, 7 ♀ 4.6-11.4 mm, 1 juv. 3.7 mm. — Stn DW 1902, 200-250 m: 1 ♂ 10.2 mm. — Stn DW 1974, 450-618 m: 1 juv. 4.5 mm.

ETYMOLOGY. — From the Latin, *similis*, like, in reference to the similarity with *A. normani*.

DESCRIPTION. — Carapace as long as wide. Transverse ridges usually interrupted, except few on posterior part of carapace, with very short, non-iridescent setae, and few long setae scattered on carapace margins. Gastric region with 2 well developed epigastric spines, and one hepatic spine on each side. Cardiac region with transverse row of 5-7 small spines; with line of 5-7 branchio-cardiac spines on each side. Posterior border of carapace with 1-2 submedian spines. Frontal margins transverse. Lateral margins moderately convex. Anterolateral spine strong, at anterolateral angle, overreaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove 0.3 length of preceding spine. Branchial margins with 4 spines. Rostrum spiniform, less than half as long as remaining carapace, straight and horizontal. Supraocular spines clearly overreaching midlength of rostrum and not exceeding end of corneas, subparallel, directed slightly upwards (Fig. 4A).

Thoracic sternites smooth, with few short striae on fourth sternite. Anterior part of fourth sternite slightly narrower than third; whole posterior margin of third sternite contiguous with fourth sternite. Transverse ridges between fifth, sixth and seventh sternites obtuse, feebly granulated (Fig. 4B).

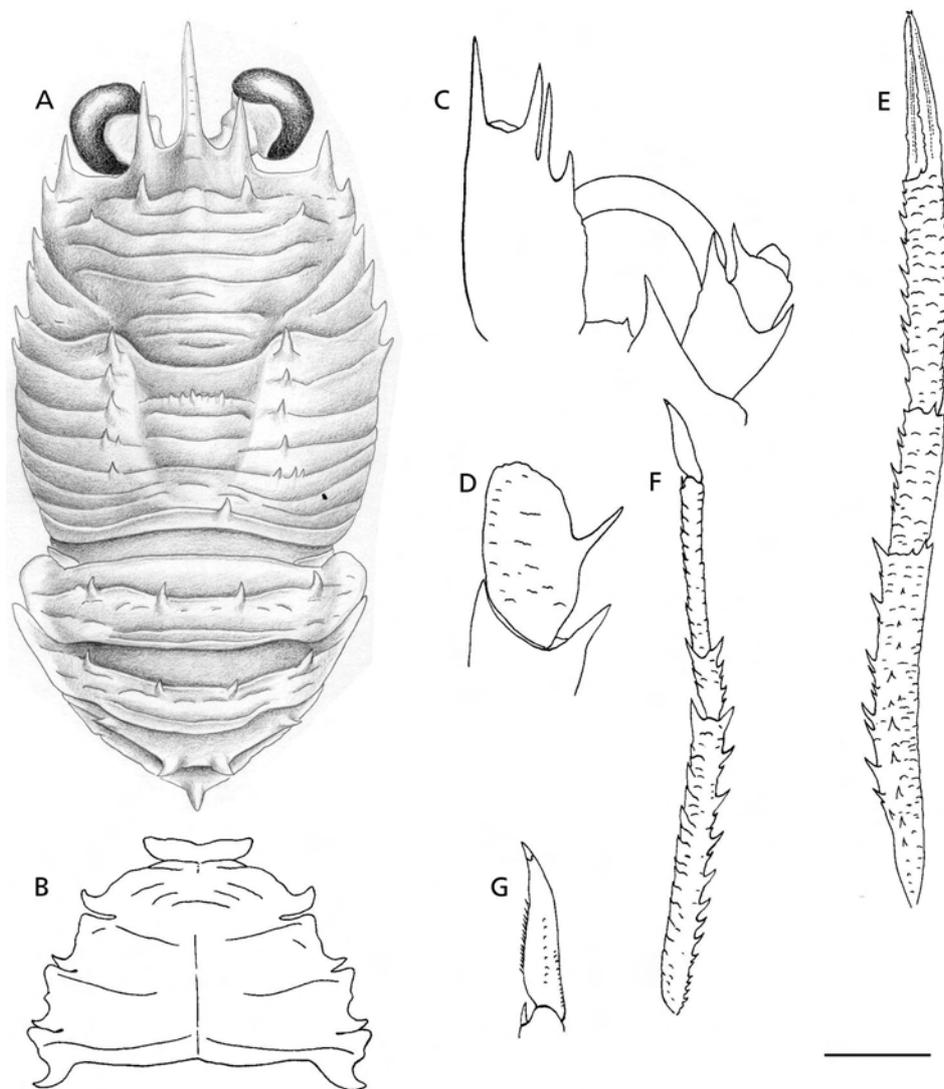
Second to fourth abdominal somites with 4 median spines on anterior ridge, with some transverse striae and scales. Posterior ridge of fourth abdominal somite with median spine.

Eyes large, maximum corneal diameter half distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded), about 0.3 carapace length, elongate, slightly overreaching corneas, with 2 distal spines, mesial spine clearly longer than lateral spine; with 2 spines on lateral margin, proximal spine short, distal spine long (Fig. 4C).

First segment of antennal peduncle with stout distomesial process reaching end of second segment; second segment with 2 distal spines, mesial spine longer than lateral spine, slightly overreaching end of third segment; third segment with mesiodistal spine (Fig. 4C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing long spine. Merus with one well developed median spine on flexor margin; extensor margin unarmed (Fig. 4D).



**FIG. 4.** *Agononida simillima* n. sp., ♀ 11.0 mm, holotype from Stn 1863, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, left first walking leg, lateral view; G, dactylus of left first walking leg, lateral view. Scale bars: A = 7.5 mm; B, E, F = 5 mm; C, D, G = 2 mm.

**FIG. 4.** *Agononida simillima* n. sp., ♀ 11,0 mm, holotype, Stn 1863, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélicède droit, vue dorsale ; F, première patte marcheuse gauche, vue latérale ; G, dactyle de la première patte marcheuse gauche, vue latérale. Échelles : A = 7,5 mm ; B, E, F = 5 mm ; C, D, G = 2 mm.

Chelipeds subequal, squamous, with few uniramous setae on mesial borders of merus and carpus, about 4 times carapace length; merus nearly twice carapace length, carpus 3.5 times longer than high and 0.6 palm length, palm about 0.6 merus length, clearly longer than fingers. Merus armed with row of spines on mesial, ventral and dorsal borders. Carpus and palm with row of spines on mesial side, few spines on lateral border. Fingers unarmed, with longitudinal carina on each side, distally curving and crossing, ending in a sharp point (Fig. 4E).

Second pereopod about 3 times carapace length; merus 1.4 times longer than carapace, about 10 times as long as high, 4 times carpus length and 1.8 times as long as propodus; propodus 10 times as long as high, about 1.8 times dactylus

length (Fig. 4E). Merus with dorsal marginal spines increasing in size distally, some spines along distal part of ventral margin. Carpus with one distomesial and distoventral spine, some small spines along dorsal margin. Propodus with 8-12 movable ventral spinules. Dactylus with dorsal margin slightly convex, slightly curving distally, with 13-16 movable small spinules along ventral margin, proximal and distal third portions unarmed (Fig. 4F). Third pereopod similar to second; fourth pereopod slightly shorter than second and third.

REMARKS. — *Agononida simillima* is closely related to *A. normani* (Henderson, 1885) from the southwestern Pacific (see above). Both species have a transverse row of small spines on the cardiac region, lack protogastric spines, bear four spines on the branchial lateral margin of the carapace, one median spine on the posterior ridge of the fourth abdominal somite and a moderately-sized process on the first antennal segment. The new species is clearly distinguishable from *A. normani* by the following differences:

The parahepatic spine is present on each side in the new species, whereas this spine is absent in *A. normani*.

The distomesial spine of the second segment of the antennal peduncle overreaches the third segment in *A. simillima*, whereas this spine never reaches the end of this segment in *A. normani*.

The walking legs are more slender in *A. simillima* than in *A. normani*.

The spinules on the ventral border of the dactylus of the walking legs nearly reach the end of the article in *A. normani*, whereas the distal third of the article is unarmed in the new species.

DISTRIBUTION. — Austral Islands, between 200 and 1000 m.

Genus **MUNIDA** Leach, 1820

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***Munida alonsoi*** Macpherson, 1994

*Munida alonsoi* Macpherson, 1994: 443, fig. 3.

*Munida alonsoi* – Baba 2005: 251 (key), 258 (list).

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. Stn DW 1884, 570-620 m: 1 ♂ 3.1 mm. — Stn DW 1897, 480-700 m: 1 ♂ 3.9 mm. — Stn 1898, 580-820 m: 1 ov. ♀ 3.6 mm. — Stn DW 1941, 290-620 m: 1 ♂ 3.3 mm. — Stn DW 1945, 120-500 m: 2 ♂ 2.4-4.2 mm, 1 ov. ♀ 3.0 mm. — Stn 1965, 500-1200 m: 1 ov. ♀ 2.3 mm. — Stn 1998, 250-302 m: 1 ♂ 2.1 mm, 1 ov. ♀ 3.0 mm. — Stn DW 2009, 320-450 m: 1 ♂ 3.2 mm.

DISTRIBUTION. — Previously known from New Caledonia and Chesterfield Islands, between 470 and 680 m. The present material was collected between 120 and 1200 m.

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***Munida amathea*** Macpherson & de Saint Laurent, 1991

*Munida amathea* Macpherson & de Saint Laurent, 1991: 389, fig. 5

*Munida amathea* – Poupin 1996: 22, pl. 10a. — Baba 2005: 254 (key), 258 (list).

MATERIAL EXAMINED. — Tuamotu Archipelago. Atoll Mururoa. Stn 450, 20.11.94, 21°52.38'S, 139°03.06'W, 640 m, trap. 5 ♂ 17.8-24.7 mm; 2 ♀ 17.0-21.9 mm. — Stn 461, 28.11.94, 21°46.93'S, 138°55.84'W, 800 m, trap. 9 ♂ 18.2-23.0 mm; 1 ov. ♀ 18.0 mm; 1 ♀ 8.8 mm. — Stn 474, 10.04.95, 21°47'S, 138°55.5'W, 800 m, trap. 3 ♂ 11.2-20.3 mm; 2 ♀ 14.2-21.2 mm. — Austral Archipelago. Rapa Island. Stn 465, 21.03.95, 27°35.9'S, 144°27.6'W, 765 m, trap. 1 ♂ 14.1 mm. — Stn 468,

22.03.95, 27°32.4'S, 144°24.4'W, 600 m, trap. 1 ♂ 13.1 mm; 3 ♂ 9.6-15.6 mm.

Austral Archipelago. BENTHAUS. — Stn DW 1885, 700-800 m: 4 juv. 4.2-5.3 mm, 1 ♀ 11.6 mm. — Stn CP 1889, 600-602 m: 1 ♂ 6.7 mm. — Stn CP 1891, 800-850 m: 1 ♀ 12.2 mm. — Stn DW 1892, 742-1000 m: 4 ♂ 8.6-16.6 mm, 2 ♀ 11.3-11.6 mm. — Stn 1909, 1000 m: 1 ♂ 14.4 mm. — Stn CP 1910, 840-1200 m: 2 ♀ 6.3-9.6 mm. — Stn DW 1956, 600-990 m: 1 ♂ 11.0 mm. —

Stn DW 1957, 558-1000 m: 1 ♂ 23.3 mm. — Stn CP 1965, 500-1200 m: 4 ♂ 7.6-8.5 mm, 1 ♀ 5.0 mm. — Stn CP 1967, 600-1200 m: 8 ♂ 5.4-24.3 mm, 2 ov. ♀ 18.4-24.2 mm, 13 ♀ 6.4-18.5 mm. — Stn DW 1991, 470-780 m: 1 ♀ 12.1 mm. — Stn DW 1995, 212-450 m: 1 ov. ♀ 20.0 mm. — Stn DW 1996, 489-1050 m: 1 ♀ 16.0 mm. — Stn DW 2004, 430-850 m: 1 ♂ 13.6 mm. — Stn 2010, 520-950 m: 2 ♀ 7.5-9.7 mm. — Stn DW 2017, 650-675 m: 1 ♀ 10.1 mm.

DISTRIBUTION. — French Polynesia, previously known from Tuamotu and Tubuai Islands, 300-800 m (Macpherson & de Saint Laurent 1991), Austral and Gambier Islands, 300-800 m (Poupin 1996). The present material was collected in Tuamotu and Austral Archipelagos, between 212 and 1200 m.

### *Munida antliae* n. sp.

Fig. 5

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1898, 580-820 m: 1 ♂ 6.5 mm. — Stn DW 1956, 600-990 m: 1 ♂ 5.2 mm. — Stn DW 1962, 470-800 m: 1 ov. ♀ 4.6 mm. — Stn CP 1965, 500-1200 m: holotype, ov. ♀ 5.2 mm (MNHN Ga 5281). — Stn DW 2010, 520-950 m: 1 ♂ 5.6 mm.

ETYMOLOGY. — The name *antliae* refers to one of the southern hemisphere constellations (the Pump).

DESCRIPTION. — Carapace slightly longer than wide. Two continuous ridges on posterior half of carapace, other ridges interrupted on cardiac region. Ridges with very short non-iridescent setae. Intestinal region with few short striae. Gastric region with 6-7 epigastric spines. One parahepatic, one anterior branchial, and one post-cervical spine usually on each side. Frontal margins slightly oblique. Lateral margins slightly convex. Anterolateral spine long, at anterolateral angle, clearly not reaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove 0.25 length of preceding spine. Branchial margins with 4 spines. Rostrum spiniform, about half as long as remaining carapace, straight and horizontal. Supraocular spines reaching midlength of rostrum, not reaching end of corneae, subparallel, slightly directed upwards (Fig. 5A).

Fourth thoracic sternite smooth, with few small striae. Anterior part of fourth sternite narrower than third; median part of posterior margin of third sternite contiguous with fourth sternite (Fig. 5B).

Second abdominal somite with 2 submedian spines in holotype, sometimes 1-2 additional small spines on each side. Second and third somites each with one transverse stria.

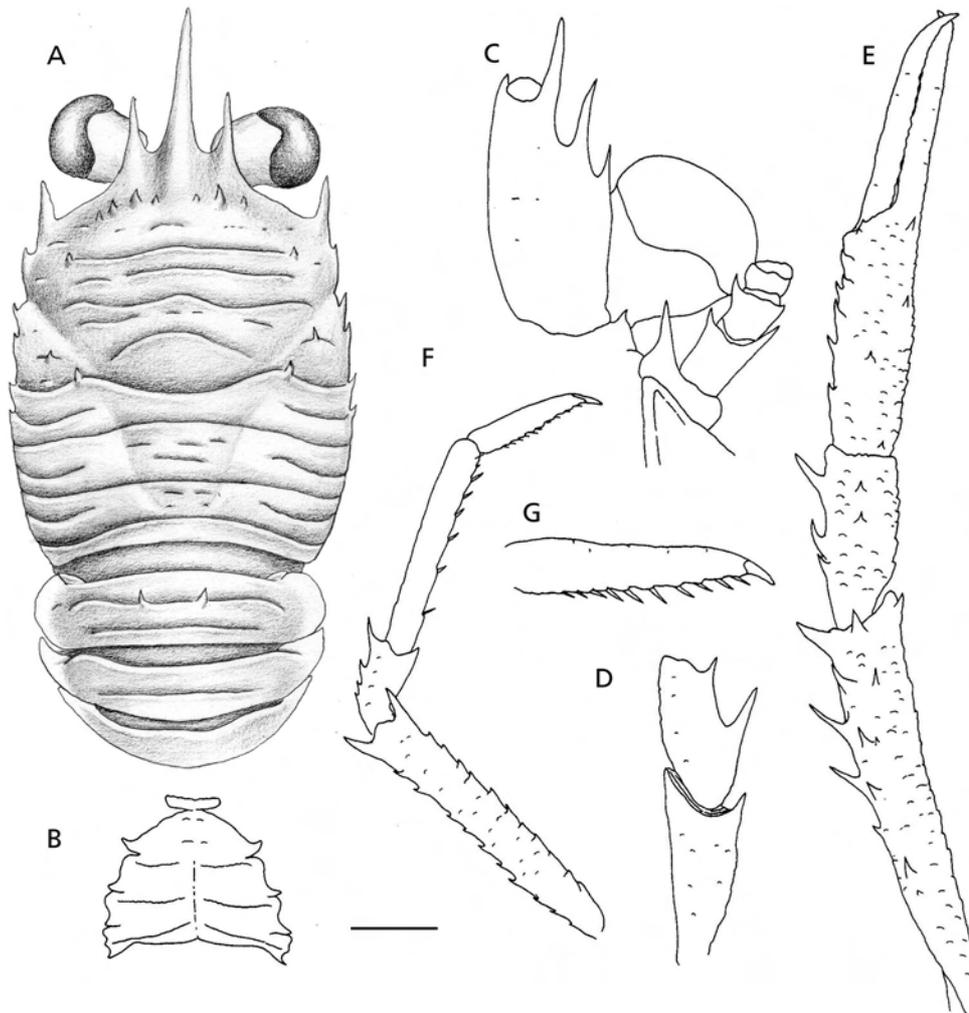
Eyes moderately small, maximum corneal diameter 0.3 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, overreaching end of corneae, with 2 distal spines, mesial spine clearly shorter than lateral; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, not reaching end of distal spines (Fig. 5C).

First segment of antennal peduncle with moderately long distomesial spine reaching or slightly overreaching end of second segment; second segment with 2 distal spines, mesial spine shorter than lateral spine, clearly not reaching end of third segment; third segment with distomesial spine (Fig. 5C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 2 spines on flexor margin, distal smaller; extensor margin unarmed (Fig. 5D).

Chelipeds subequal in length, with few uniramous setae on mesial borders of articles. Merus longer than carapace, more than twice carpus length, armed with some spines, strongest spine on distal border, reaching proximal fourth of carpus. Carpus twice longer than height, slightly shorter than palm, with few strong spines on mesial margin, few short spines on



**FIG. 5.** *Munida antliae* n. sp., ov. ♀ 5.2 mm, holotype from stn 1965, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A = 0.7 mm; B, E, F = 1 mm; C, D, G = 0.5 mm.

**FIG. 5.** *Munida antliae* n. sp., ov. ♀ 5,2 mm, holotype, stn 1965, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélicède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale. Echelles : A = 0,7 mm ; B, E, F = 1 mm ; C, D, G = 0,5 mm.

dorsal side. Palm as long as fingers, with row of spines along mesial border, few small spines on lateral and dorsal sides. Fingers unarmed, except subterminal spines, distally curving and crossing, ending in a sharp point (Fig. 5E).

Second pereopod 2.3 times carapace length; merus shorter than carapace, about 5.5 times as long as high, about 3 times carpus length and 1.4 times as long as propodus; propodus about 6.5 times as long as high, about 1.5 times dactylus length (Fig. 5F). Merus with small dorsal and ventral spines increasing in size distally. Carpus with distodorsal and distoventral spines, some additional spines on dorsal margin. Propodus with 6-8 movable ventral spines. Dactylus slightly curving distally, with 9-10 movable spinules along entire ventral margin (Fig. 5G). Third pereopod similar to second; fourth pereopod shorter than second and third. Merus of fourth pereopod three-fourth length of second pereopod.

REMARKS. — *Munida antliae* belongs to the group of species with 4 spines on the lateral branchial margins of the carapace, without carinae or granules on the lateral parts of the thoracic sternites, moderately large eyes, and spines on the anterior ridge of the second abdominal somite. The new species is closely related to *M. psamathe* Macpherson, 1994, from New Caledonia and Matthew and Hunter Islands at 500-700 m (Macpherson 1994).

The two species are easily distinguished by the following characters:

The extensor margin of the merus of the third maxilliped is unarmed in *M. antliae*, whereas this margin is armed with a distal spine in *M. psamathe*.

The palm of the cheliped is as long as the fingers in *M. antliae*, whereas the palm is twice the length of the fingers in *M. psamathe*. Furthermore, the spines of the merus and carpus in *M. antliae* are larger than in *M. psamathe*.

The dactylus of the walking legs is half as long as the propodus in *M. psamathe*, instead of two-thirds in *M. antliae*.

### ***Munida apheles* n. sp.**

Fig. 6

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1881, 112-121 m: 2 ♂ 2.1-2.9 mm, 1 ov. ♀ 3.4 mm. — Stn DW 1986, 150 m: 2 ov. ♀ 3.4-4.5 mm. — Stn DW 1914, 150 M: holotype, ♂ 4.0 mm (MNHN Ga 5282), 18 ♂ 3.2-5.3 mm, 12 ov. ♀ 3.7-5.2 mm, 10 ♀ 2.7-3.6 mm. — Stn CP 1921, 150-160 m: 1 ♂ 3.2 mm. — Stn DW 1968, 100-120 m: 1 ov. ♀ 3.8 mm.

ETYMOLOGY. — From the Greek, *apheles*, smooth, in reference to the antero-branchial border of the carapace.

DESCRIPTION. — Carapace 1.2 times longer than wide. Transverse ridges usually interrupted on cardiac and branchial regions, with very short, non-iridescent setae and few long setae scattered on gastric region. Small scales on intestinal region. Dorsal surface of carapace armed with 3-4 pairs of epigastric spines; one parahepatic spine on each side in several specimens. Frontal margins transverse. Lateral margins subparallel. Anterolateral spine short, situated on front margin, near anterolateral angle, clearly not reaching level of sinus between rostrum and supraocular spines. Second marginal spine before cervical groove slightly smaller than preceding spine. Branchial margins with only 1 spine, present directly behind ordinary end of cervical groove. Rostrum spiniform, nearly half as long as remaining carapace, slightly convex and horizontal. Supraocular spines short, clearly not reaching midlength of rostrum and not reaching end of cornea, subparallel, slightly directed upwards (Fig. 6A).

Fourth thoracic sternite smooth, with few short striae. Anterior part of fourth sternite narrower than third; 0.6 of posterior margin of third sternite contiguous with fourth sternite (Fig. 6B).

Abdominal somites unarmed. Second and third somites each with 1 transverse stria.

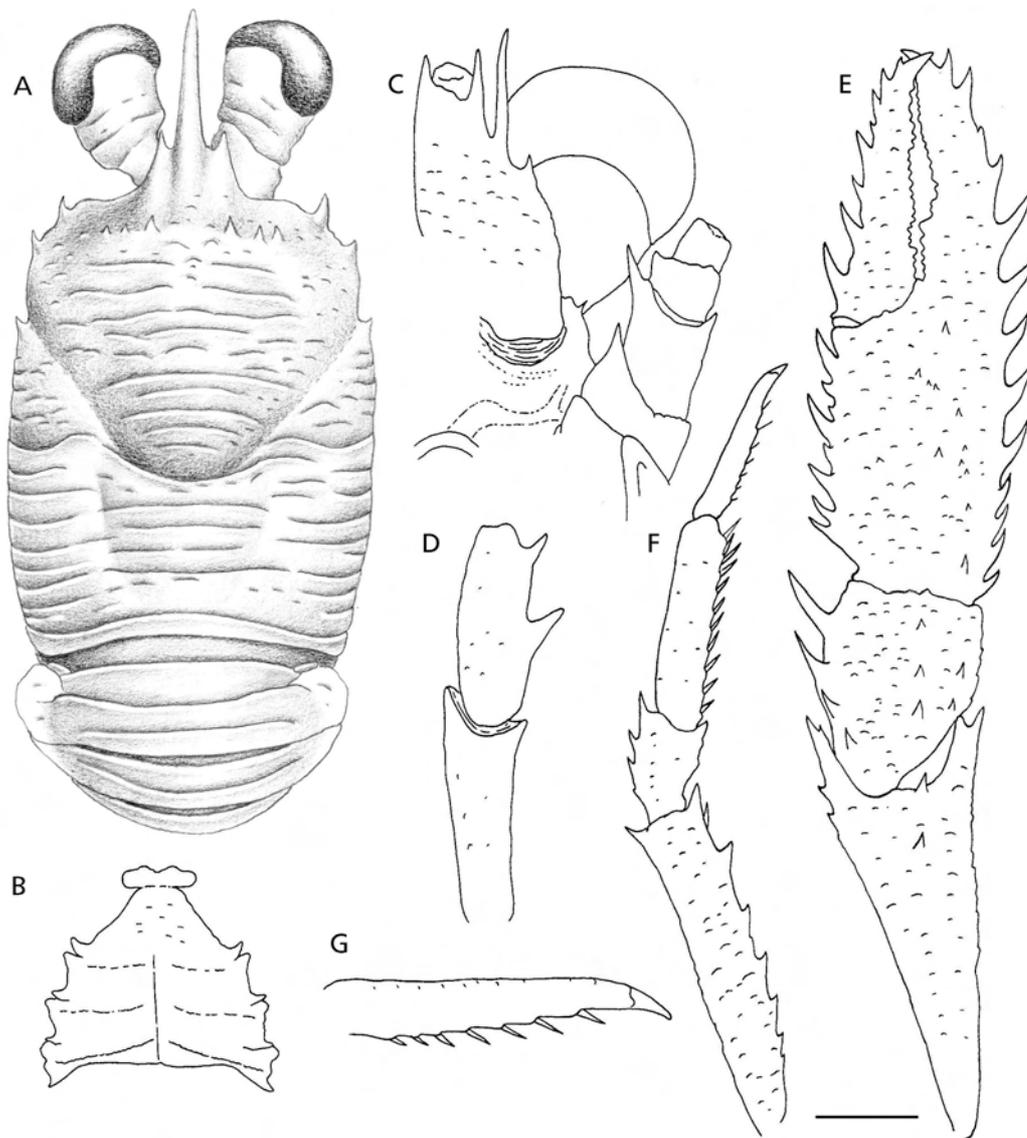
Eyes large, maximum corneal diameter 0.5 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, not reaching end of cornea, with 2 distal spines, mesial spine not reaching end of lateral spine; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, overreaching end of distal spines (Fig. 6C).

First segment of antennal peduncle with short distomesial spine clearly not reaching end of second segment; second segment with 2 distal spines, mesial spine longer than lateral spine, reaching end of third segment; third segment unarmed (Fig. 6C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, with distoventral spine. Merus with 2 well developed spines on flexor margin, distal smaller; extensor margin unarmed (Fig. 6D).

Chelipeds subequal in length, squamous, with numerous uniramous setae denser on mesial and lateral borders of articles. Merus shorter than carapace, 1.7 times carpus length, armed with some spines, strongest spine on distal border,



**FIG. 6.** *Munida apheles* n. sp., ♂ 4.0 mm, holotype from stn 1914, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A, B, E, F = 1 mm; C, D, G = 0.5 mm.

**FIG. 6.** *Munida apheles* n. sp., ♂ 4,0 mm, holotype, stn 1914, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélipède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale. Échelles : A, B, E, F = 1 mm ; C, D, G = 0,5 mm.

reaching proximal third of carpus. Carpus 1.4 times as long as high, shorter than palm, several strong spines on mesial border and some spines on dorsal side. Palm slightly shorter than fingers, with row of strong mesial spines, with some scattered small spines on dorsal side and one row of strong lateral spines continued on to fixed finger and reaching tip. Movable finger with row of strong mesial spines reaching tip. Fingers distally curving and crossing, ending in sharp point, cutting edges with small teeth of various sizes (Fig. 6E).

Second pereopod about twice carapace length, with numerous uniramous setae along dorsal margins of articles; merus 0.8 times as long as carapace, about 5 times as long as high, about 3 times carpus length and 1.8 times as long as propodus; propodus about 4 times as long as high, and as long as dactylus (Fig. 6F). Dorsal border of merus with distal spine only, ventral margin with row of spines increasing in size distally. Carpus with several dorsal spines and 1 distoventral spine. Propodus with 11-12 movable ventral spines. Dactylus slightly curving distally, with 7-10 movable spinules along ventral margin, distal fourth unarmed, ultimate spine clearly more remote from tip of dactylus than from penultimate spine (Fig. 6G). Third pereopod similar to second; fourth pereopod shorter than second and third. Merus of fourth pereopod three-fourth length of second pereopod.

REMARKS. — *Munida apheles* has only 1 spine on each branchial margin of the carapace, a feature that is uniquely shared with *M. erugata* n. sp. Some species of *Munida*, however, also lack a series of well developed branchial spines, but instead have tiny spine (usually five) on the lateral margins of the carapace behind the cervical groove, e.g., *M. alonsoi*, *M. barangei*, *M. micula*, *M. stia* (see Macpherson 1994). Therefore, the new species is compared with these species.

The new species is closely related to *M. micula* Macpherson, 1996 from Futuna Island and *M. limatula* Macpherson, 2004 from Tonga Islands (Macpherson 1996, 2004). In the new species, however, both the lateral and the mesial margins of the chela have a row of strong spines; these spines are always clearly smaller and less numerous in *M. limatula* and *M. micula*.

*Munida apheles* is also close to *M. erugata* (see below).

### ***Munida arae* n. sp.**

Fig. 7

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1998, 250-302 m: 1 ♂ 9.4 mm, holotype ov. ♀ 8.2 mm (MNHN-Ga 5283).

ETYMOLOGY. — The name *arae* refers to one of the southern hemisphere constellations (the Altar).

DESCRIPTION. — Carapace 1.2 times longer than wide. Few secondary striae between main transverse ridges. Ridges with very short non-iridescent setae, and few scattered iridescent uniramous setae. Small scale on intestinal region. Gastric region with 6 pairs of epigastric spines. One hepatic, 1 parahepatic, and 1 anterobranchial spine on each side. Frontal margins transverse. Lateral margins subparallel. Anterolateral spine long, at anterolateral angle, overreaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove 0.3 or 0.25 length of preceding spine. Branchial margins with 5 spines. Rostrum spiniform, nearly half as long as remaining carapace, nearly straight and horizontal. Supraocular spines reaching midlength of rostrum and not reaching end of corneae, subparallel, slightly directed upwards (Fig. 7A).

Fourth thoracic sternite smooth. Anterior part of fourth sternite slightly narrower than third (Fig. 7B).

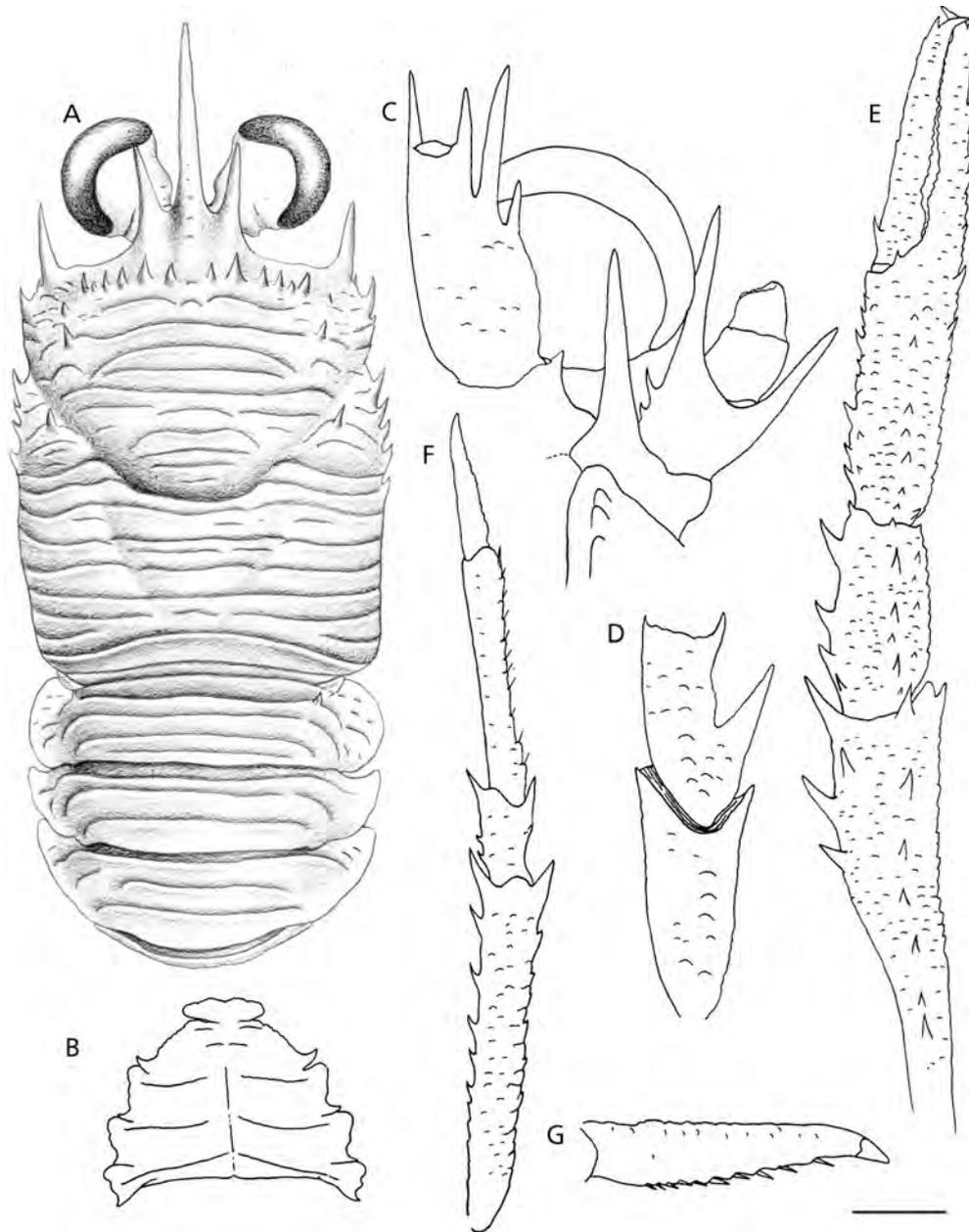
Second abdominal somite with few spines on lateral sides of anterior ridge. Second to fourth somites each with 2-3 transverse striae.

Eyes large, maximum corneal diameter slightly less than 0.5 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, slightly overreaching end of corneae, with 2 distal spines, mesial spine longer than lateral; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, reaching end of distal spines (Fig. 7C).

First segment of antennal peduncle with long distomesial spine overreaching end of third segment; second segment with strong distal spines, mesial spine longer than lateral spine, slightly exceeding last antennal segment; third segment unarmed (Fig. 7C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 2 well developed spines on flexor margin, distal smaller; extensor margin with small distal spine (Fig. 7D).



**FIG. 7.** *Munida arae* n. sp., ov. ♀ 8.2 mm, holotype from stn 1998, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A, B, E, F = 2 mm; C, D, G = 1 mm.

**FIG. 7.** *Munida arae* n. sp., ov. ♀ 8,2 mm, holotype, stn 1998, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélipède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale. Échelles : A, B, E, F = 2 mm ; C, D, G = 1 mm.

Chelipeds subequal in length, squamous, with numerous uniramous setae denser on mesial borders. Merus as long as carapace, twice carpus length, armed with some spines, strongest spine on distal border, reaching proximal quarter of carpus. Carpus twice as long as high, slightly shorter than hand, with several spines on dorsal and lateral sides. Palm shorter than fingers, with row of spines along mesial and dorsal borders, row of spines along lateral margin continued on to entire fixed finger; movable finger with basal spine; each finger with subterminal spines, distally curving and crossing, ending in a sharp point (Fig. 7E).

Second pereopod about 1.9 times carapace length; merus 0.8 times as long as carapace, about 5.6 times as long as high, about 3.5 times carpus length and 1.5 times as long as propodus; propodus about 5.7 times as long as high, about 1.6 times dactylus length (Fig. 7F). Merus with well developed dorsal marginal spines increasing in size distally, ventral margin with several spines and 1 long distal spine. Carpus with several dorsal spines and 1 distoventral spine. Propodus with 10-11 movable ventral spines. Dactylus slightly curving distally, with 10-11 movable spinules along entire ventral margin, ultimate spine more remote from tip of dactylus than from penultimate spine (Fig. 7G). Third pereopod similar to second; fourth pereopod shorter than second and third. Merus of fourth pereopod three-fourth length of second pereopod.

COLOUR. — Ground colour of carapace and abdominal segments orange; rostrum and supraocular spines orange. Chelipeds and walking legs orange, with some transverse whitish bands; chelipeds with distal part of palm and proximal part of fingers whitish, tips of fingers whitish.

REMARKS. — *Munida arae* belongs to the group of species with 5 spines on the branchial lateral margins of the carapace, without carinae or granules on the lateral parts of the thoracic sternites, large eyes, an unarmed anterior ridge of the second abdominal somite, and the distomesial spine of the antennular peduncle longer than the distolateral spine. The new species is closely related to *M. acantha* Macpherson, 1994 from New Caledonia, Loyalty Islands and Surprise Atoll, between 59 and 460 m (Macpherson 1994).

The two species are easily distinguished by the following characters:

The movable finger of the cheliped has a row of spines along the lateral border in *M. acantha*; instead of only 1 basal spine as in *M. arae*.

The distomesial spine of the first segment of the antennal peduncle overreaches the end of the third segment in the new species. This spine overreaches the antennal peduncle in *M. acantha*.

The propodus of the walking legs is more than twice as long as dactylus in *M. acantha*, whereas the propodus is 1.6 times the dactylus length in the new species.

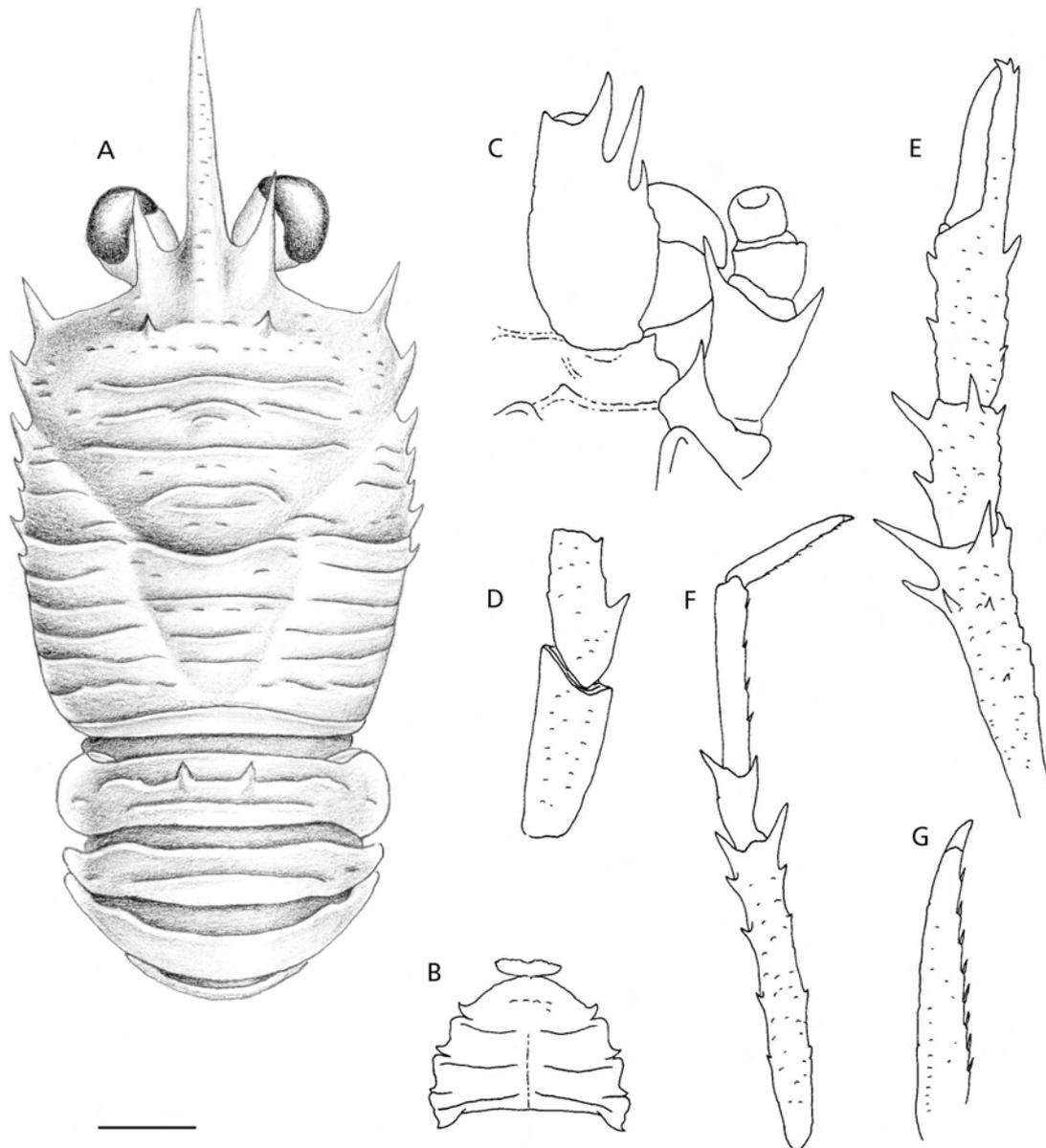
### ***Munida columbae* n. sp.**

Fig. 8

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn CP 1910, 840-1200 m: 2 ♂ 5.4-6.8 mm. — Stn CP 1966, 636-1200 m: holotype, ♀ 6.8 mm (MNHN Ga 5284).

ETYMOLOGY. — The name *columbae* refers to one of the southern hemisphere constellations (the Dove).

DESCRIPTION. — Carapace 1.2 times longer than wide. Few secondary striae between main transverse ridges. Ridges with very short non-iridescent setae. Intestinal region without striae. Gastric region with 1 pair of epigastric spines. Remaining parts of carapace unarmed. Frontal margins slightly oblique. Lateral margins subparallel. Anterolateral spine long, at anterolateral angle, nearly reaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove 0.3 length of preceding spine. Branchial margins with 5 spines. Rostrum spiniform, about 0.6 times as long as remaining carapace, straight and horizontal. Supraocular spines reaching midlength of rostrum and reaching end of corneae, subparallel, slightly directed upwards (Fig. 8A).



**FIG. 8.** *Munida columbae* n. sp., ♀ 6.8 mm, holotype from stn 1966, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A = 3 mm; B, E, F = 2 mm; C, D, G = 1 mm.

**FIG. 8.** *Munida columbae* n. sp., ♀ 6,8 mm, holotype, stn 1966, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélipède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale. Echelles : A = 3 mm ; B, E, F = 2 mm ; C, D, G = 1 mm.

Fourth thoracic sternite smooth. Anterior part of fourth sternite narrower than third; median part of posterior margin of third sternite contiguous with fourth sternite (Fig. 8B).

Second abdominal somite with 2 median spines and 2 minute spines on each side. Second and third somites each with 1 transverse stria.

Eyes moderately small, maximum corneal diameter less than 0.3 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, overreaching end of corneae, with 2 distal spines, mesial spine clearly shorter than lateral; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, reaching end of distolateral spine (Fig. 8C).

First segment of antennal peduncle with short distomesial spine clearly not reaching end of second segment; second segment with 2 distal spines, mesial spine slightly longer than lateral spine, reaching end of third segment; third segment unarmed (Fig. 8C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 2 spines on flexor margin, distal smaller; extensor margin unarmed (Fig. 8D).

Chelipeds subequal in length, with numerous uniramous setae denser on mesial borders. Merus shorter than carapace, twice carpus length, armed with some spines, strongest spine on distal border overreaching proximal third of carpus. Carpus twice as long as high, slightly shorter than palm, with few strong spines on mesial and distal margins. Palm slightly shorter than fingers, with row of spines along mesial border, few spines on lateral margin, 1 strong spine near base of fixed finger. Fingers unarmed, except subterminal spines, distally curving and crossing, ending in a sharp point (Fig. 8E).

Second pereopod twice carapace length, with numerous uniramous setae along dorsal margin; merus shorter than carapace, about 7 times as long as high, about 4 times carpus length and 1.6 times as long as propodus; propodus about 6 times as long as high, about 1.4 times dactylus length (Fig. 8F). Merus with dorsal and ventral marginal spines increasing in size distally. Carpus with distodorsal and distoventral spines. Propodus with 4-6 movable ventral spines. Dactylus slightly curving distally, with 8-9 movable spinules along entire ventral margin (Fig. 8G). Third pereopod similar to second; fourth pereopod shorter than second and third. Merus of fourth pereopod three-fourth length of second pereopod.

REMARKS. — *Munida columbae* belongs to the group of species with 5 spines on the branchial lateral margins of the carapace, without distinct carinae on the lateral parts of the thoracic sternites, moderately small eyes, and spines on the anterior ridge of the second abdominal somite. The new species is closely related to *M. profunda* Macpherson & de Saint Laurent, 1991 from French Polynesia (see below). However, the two species are easily distinguished by the size of the spines of the antennal peduncle. The distomesial spine of the basal segment of the antennal peduncle is very short, clearly not reaching the end of the second segment in *M. columbae*, conversely this spine nearly reaches the end of the second segment in *M. profunda*. Furthermore, the distomesial spine of the second antennal segment overreaches the antennal peduncle in *M. profunda*, whereas this spine only slightly exceeds the end of the third segment in *M. columbae*.

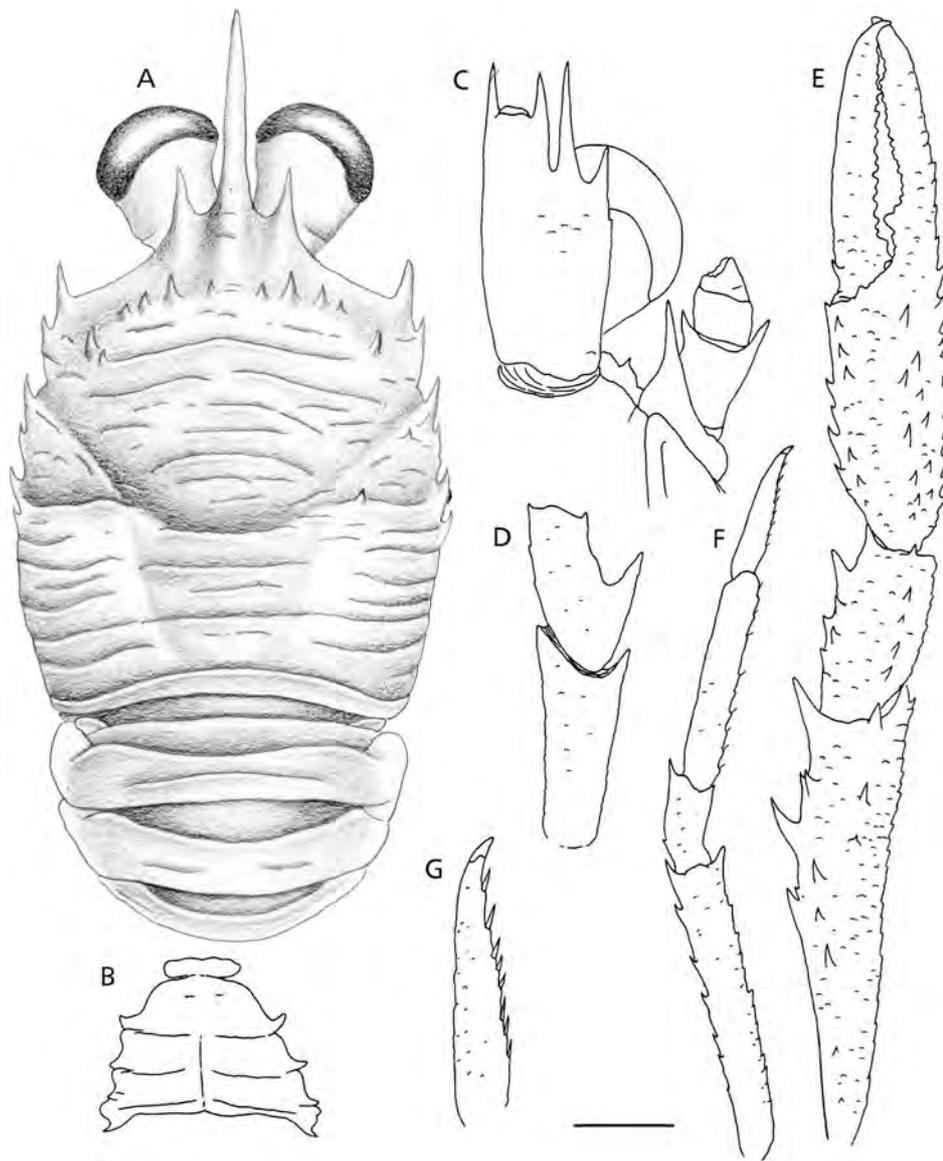
### ***Munida descensa*** n. sp.

Fig. 9

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1998, 250-302 m: holotype, ♂ 3.1 mm (MNHN Ga 5285). — Stn DW 2006, 350-450 m: 1 ♂ 3.2 mm.

ETYMOLOGY. — From the Latin, *descensus*, inclined, in reference to frontal margin of the carapace.

DESCRIPTION. — Carapace slightly longer than wide. Few secondary striae between main transverse ridges. Ridges with very short non-iridescent setae and some scattered iridescent and uniramous setae. Few small scales on intestinal region. Gastric region with 4 pairs of epigastric spines. One small parahepatic, 1 anterobranchial and 1 postcervical spine on each



**FIG. 9.** *Munida descensa* n. sp., ♂ 3.1 mm, holotype from stn 1998, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A = 0.7 mm; B, E, F = 1 mm; C, D, G = 0.5 mm.

**FIG. 9.** *Munida descensa* n. sp., ♂ 3,1 mm, holotype, stn 1998, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélopède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite ; vue latérale. Échelles : A = 0,7 mm ; B, E, F = 1 mm ; C, D, G = 0,5 mm.

side. Frontal margins oblique. Lateral margins slightly convex. Anterolateral spine long, at anterolateral angle, clearly not reaching level of sinus between rostrum and supraocular spines. Second marginal spine before cervical groove 0.3 or 0.25 length of preceding spine. Branchial margins with 4 spines. Rostrum spiniform, about half as long as remaining carapace, slightly convex and horizontal. Supraocular spines not reaching midlength of rostrum and not reaching end of corneae, subparallel, slightly directed upwards (Fig. 9A).

Fourth thoracic sternite smooth. Anterior part of fourth sternite wider than third; whole posterior margin of third sternite contiguous with fourth sternite (Fig. 9B).

Abdominal somites unarmed. Second somite with 1 transverse stria, third somite with medially interrupted stria.

Eyes large, maximum corneal diameter about 0.3 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, overreaching end of corneae, with 2 distal spines, mesial spine slightly overreaching lateral spine; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, overreaching end of distal spines (Fig. 9C).

First segment of antennal peduncle with long distomesial spine overreaching end of second segment; second segment with 2 distal spines, mesial spine shorter than lateral spine, clearly not reaching end of third segment; third segment unarmed (Fig. 9C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 2 spines on flexor margin, distal smaller; extensor margin with small distal spine (Fig. 9D).

Chelipeds subequal in length, squamous, with numerous uniramous setae denser on mesial borders. Palm shorter than fingers. Merus armed with some spines, strongest spine on distal border overreaching proximal quarter of carpus. Carpus twice as long as high, with several spines on dorsal and mesial sides. Palm with row of spines along mesial, dorsal and lateral borders. Fingers unarmed, except subterminal spines; basal spine on movable finger; distally curving and crossing, ending in a sharp point (Fig. 9E).

Second pereopod about 2.2 times carapace length; merus shorter than carapace, about 6 times as long as high, about 3 times carpus length and 1.5 times as long as propodus; propodus about 5 times as long as high, about 1.3 times dactylus length (Fig. 9F). Merus with dorsal marginal spines increasing in size distally, ventral margin with several spines and 1 long distal spine. Carpus with few small dorsal spines and 1 distoventral spine. Propodus with 7-9 movable ventral spines. Dactylus slightly curving distally, with 7-8 movable spinules along entire ventral margin (Fig. 9G). Third pereopod slightly shorter than second; fourth pereopod shorter than second and third. Merus of fourth pereopod three-fourth length of second pereopod.

REMARKS. — *Munida descensa* belongs to the group of species having 3-4 spines on the branchial lateral margins of the carapace, without carinae or granules on the lateral parts of the thoracic sternites, moderately large eyes, and abdominal somites unarmed. The new species is closely related to *M. sentai* Baba, 1986 from the Andaman Sea (Baba 1986a, 2005).

The two species are easily distinguished by several constant characters:

The movable and fixed fingers of the chelipeds have a row of mesial and lateral spines, respectively, in *M. sentai*. These spines are absent in *M. descensa*.

The distal spines of the basal segment of the antennular peduncle are subequal in *M. sentai*, whereas the distomesial spine is longer than the distolateral in *M. descensa*.

The distomesial spine of the second segment of the antennal peduncle is short and never reaches the end of the third segment in *M. descensa*, whereas this spine is well developed and overreaches the third segment in *M. sentai*.

### ***Munida distiza*** Macpherson, 1994

*Munida distiza* Macpherson, 1994: 459, figs 14, 68, 69.

*Munida distiza* – Poupin 1996: 22, pl. 10b, c. — Baba 2005: 252 (key), 262 (list).

MATERIAL EXAMINED. — Tuamotu Archipelago. Atoll Mururoa. Stn 497, 02.05.1996, 21°50.8'S, 138°58'W, 290 m: 13 ♂ 13.5-20.5 mm, 2 ov. ♀ 16.0-16.6 mm, 7 ♀ 12.0-18.4 mm.

Austral Archipelago. BENTHAUS. Stn DW 1983, 300-540 m: 1 ov. ♀ 10.5 mm. — Stn CAS 2008, 280-300 m: 5 ♂ 13.2-15.4 mm, 1 ov. ♀ 12.4 mm.

DISTRIBUTION. — Previously known from Philippines, New Caledonia, Loyalty Islands, Matthew & Hunter Islands, at 150-400 m (Macpherson 1994), and French Polynesia (Tuamotu Archipelago) at 550 m (Poupin 1996). The present material is from Tuamotu and Austral Islands, between 280 and 540 m.

***Munida erugata*** n. sp.

Fig. 10

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1869, 240-440 m: holotype, ov. ♀ 3.0 mm (MNHN Ga 5286), 1 ♂ 2.2 mm, 1 ♀ 2.7 mm. — Stn DW 1973, 200-350 m: 1 ov. ♀ 3.1 mm.

ETYMOLOGY. — From the Latin, *erugo*, smooth, in reference to the antero-branchial border of the carapace.

DESCRIPTION. — Carapace slightly longer than wide. Transverse ridges usually interrupted on cardiac and branchial regions, with very short, non-iridescent setae. Some small scales on intestinal region. Gastric region with 3-4 pairs of epigastric spines; 1 parahepatic spine in several individuals. Frontal margins transverse. Lateral margins subparallel. First anterolateral spine short, at anterolateral angle, clearly not reaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove slightly smaller than preceding spine. Branchial margins with only 1 spine, present directly behind ordinary end of cervical groove. Rostrum spiniform, short, nearly 0.3 as long as remaining carapace, clearly not reaching end of corneae, straight and horizontal. Supraocular spines short, clearly not reaching midlength of rostrum and not reaching end of corneae, subparallel, slightly directed upwards (Fig. 10A).

Fourth thoracic sternite smooth, with few short striae. Anterior part of fourth sternite narrower than third; most part of posterior margin of third sternite contiguous with fourth sternite (Fig. 10B).

Abdominal somites unarmed, without transverse striae.

Eyes large, maximum corneal diameter 0.5 distance between bases of anterolateral spines.

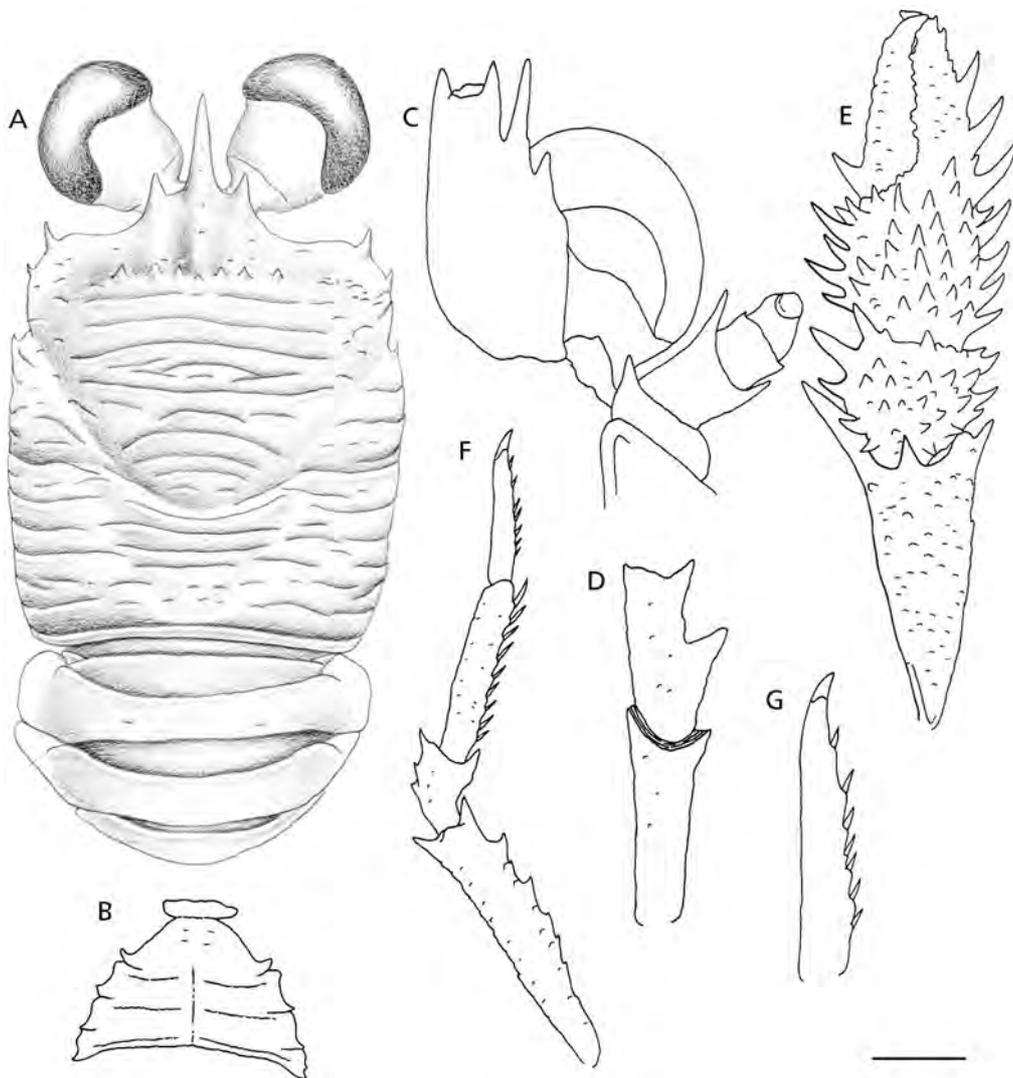
Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, exceeding end of corneae, with 2 subequal distal spines; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, reaching end of distal spines (Fig. 10C).

First segment of antennal peduncle with short distomesial spine clearly not reaching end of second segment; second segment with 2 distal spines, mesial spine longer than lateral spine, reaching end of third segment; third segment unarmed (Fig. 10C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 2 well developed spines on flexor margin, distal smaller; extensor margin with minute distal spine (Fig. 10D).

Chelipeds subequal in length, squamous, with numerous uniramous setae denser on mesial and lateral borders. Merus 0.8 times carapace length, twice carpus length, armed with some spines, strongest spine on distal border reaching midlength of carpus. Carpus as long as high, slightly shorter than palm, with numerous strong spines on mesial, dorsal and lateral sides. Palm shorter than fingers, with row of strong mesial spines, numerous strong spines on dorsal side and 1 row of strong lateral spines continued on to fixed finger and nearly reaching tip, 2 small spines near tip. Movable finger with 1 mesial spine near base. Fingers distally curving and crossing, ending in sharp point, cutting edges with small teeth of various sizes (Fig. 10E).

Second pereopod twice carapace length; merus 0.8 times as long as carapace, about 5 times as long as high, about 3 times carpus length and 1.6 times as long as propodus; propodus about 6 times as long as high, and slightly longer than dactylus (Fig. 10F). Dorsal border of merus with distal spine only, ventral margin with row of spines increasing in size distally. Carpus with several dorsal spines and 1 distoventral spine. Propodus with 9-10 movable ventral spines. Dactylus slightly curving distally, with 7-8 movable spinules along ventral margin, distal fourth unarmed, ultimate spine clearly



**FIG. 10.** *Munida erugata* n. sp., ov. ♀ 3.0 mm, holotype from stn 1869, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A = 0.7 mm; B, E, F = 1 mm; C, D, G = 0.5 mm.

**FIG. 10.** *Munida erugata* n. sp., ov. ♀ 3,0 mm, holotype, stn 1869, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélopède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale. Echelles : A = 0,7 mm ; B, E, F = 1 mm ; C, D, G = 0,5 mm.

more remote from tip of dactylus than from penultimate spine (Fig. 10G). Third pereopod similar to second; fourth pereopod shorter than second and third. Merus of fourth pereopod three-fourth length of second pereopod.

REMARKS. — *Munida erugata* is closely related to *M. apheles* n. sp., and they are easily distinguished by several constant characters:

The second abdominal somite has 1 transverse stria in *M. apheles*, whereas this stria is absent in *M. erugata*.

The dorsal side of the carpus and palm of the chelipeds is armed with numerous strong spines in *M. erugata*. These spines are very small and nearly absent in *M. apheles*. Furthermore, the movable finger has a row of strong spines along the entire mesial margin in *M. erugata*, whereas this margin is armed with 1 basal spine in *M. apheles*.

***Munida evarne*** Macpherson & de Saint Laurent, 1991

*Munida evarne* Macpherson & de Saint Laurent, 1991: 415, fig. 13.  
*Munida evarne* – Baba 2005: 248 (key), 262 (list).

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. Stn DW 1881, 112-121 m: 1 ov. ♀ 3.7 mm. — Stn DW 1888, 100-120 m: 1 ♂ 5.2 mm. — Stn DW 1926, 50-90 m: 4 ♂ 4.3-5.5 mm, 3 ov. ♀ 5.6-6.1 mm. — Stn DW 1927, 95-105 m: 1 ♂ 4.7 mm, 2 ♀ 3.6-5.8 mm. — Stn DW 1936, 80-100 m: 3 ♂ 4.5-7.8 mm, 3 ov. ♀ 4.7-5.2 mm, 4 ♀ 4.3-4.8 mm, 3 juv. 2.0-3.2 mm. — Stn DW 1946, 100-200 m: 1 ♂ 5.8 mm. — Stn DW 1947, 120-150 m: 5 ♂ 3.8-5.7 mm, 8 ov. ♀ 3.5-7.0 mm. — Stn DW 1958, 80-150 m: 3 ♂ 3.5-3.7 mm, 4 ov. ♀ 3.6-5.5 mm, 2 ♀ 4.0-4.6 mm. — Stn DW 1959, 95-380 m: 2 ov. ♀ 3.2-4.6 mm, 1 ♀ 3.7 mm. — Stn DW 1968, 100-120 m: 9 ♂ 4.2-7.6 mm, 5 ov. ♀ 4.2-6.0 mm, 5 ♀ 3.2-6.8 mm. — Stn DW 1978, 120-180 m: 3 ♂ 3.3-4.8 mm, 2 ov. ♀ 3.8-6.6 mm, 1 ♀ 4.6 mm. — Stn DW 1985, 100-107 m: 16 ♂ 3.5-6.3 mm, 8 ov. ♀ 4.7-5.5 mm, 3 ♀ 4.2-4.6 mm. — Stn DW 1986, 150 m: 1 ♂ 5.7 mm. — Stn DW 2013, 80-93 m: 2 ♂ 3.8-4.0 mm, 2 ov. ♀ 3.1-3.5 mm, 1 ♀ 3.2 mm.

DISTRIBUTION. — French Polynesia (Tubuai Islands), at 100-130 m (Macpherson & de Saint Laurent 1991). The present material is from Austral Islands, between 80 and 380 m.

***Munida fasciata*** n. sp.

Fig. 11

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1941, 290-620 m: 1 ov. ♀ 3.9 mm. — Stn CP 1965, 500-1200 m: 3 ♂ 4.0-6.4 mm, 2 ov. ♀ 5.3-5.5 mm. — Stn DW 1996, 489-1050 m: holotype ♂ 4.7 mm (MNHN Ga 5287). — Stn DW 2001, 200-550 m: 1 ♂ 3.6 mm.

ETYMOLOGY. — From the Latin, *fasciatus*, banded, in reference to the red band on the posterior border of the carapace.

DESCRIPTION. — Carapace slightly longer than wide. Transverse ridges with short, non-iridescent setae. Main transverse striae on posterior part of carapace usually interrupted on cardiac region. Small scales on hepatic and anterobranchial regions. Gastric region with row of small epigastric spines. One parahepatic, 1 anterobranchial and 1 postcervical small spine on each side. Frontal margins transverse. Lateral margins slightly convex. Anterolateral spine well developed, somewhat divergent, situated at anterolateral angle, not reaching level of sinus between rostral and supraocular spines. Two or 3 minute marginal spines before cervical groove. Branchial margins with 5 small spines. Rostrum spiniform, 0.6 as long as remaining carapace horizontal, tip directed upwards, dorsally carinated; rostral spine (measured at level of end of cornea) clearly wider than second segment of antennal peduncle (measured at terminal level). Supraocular spines short, not reaching midlength of rostrum or end of corneas, subparallel, slightly directed upwards (Fig. 11A).

Thoracic sternites smooth. Few short scales on fourth sternite. Anterior part of fourth sternite narrower than third; median part of posterior margin of third sternite contiguous with fourth sternite (Fig. 11B).

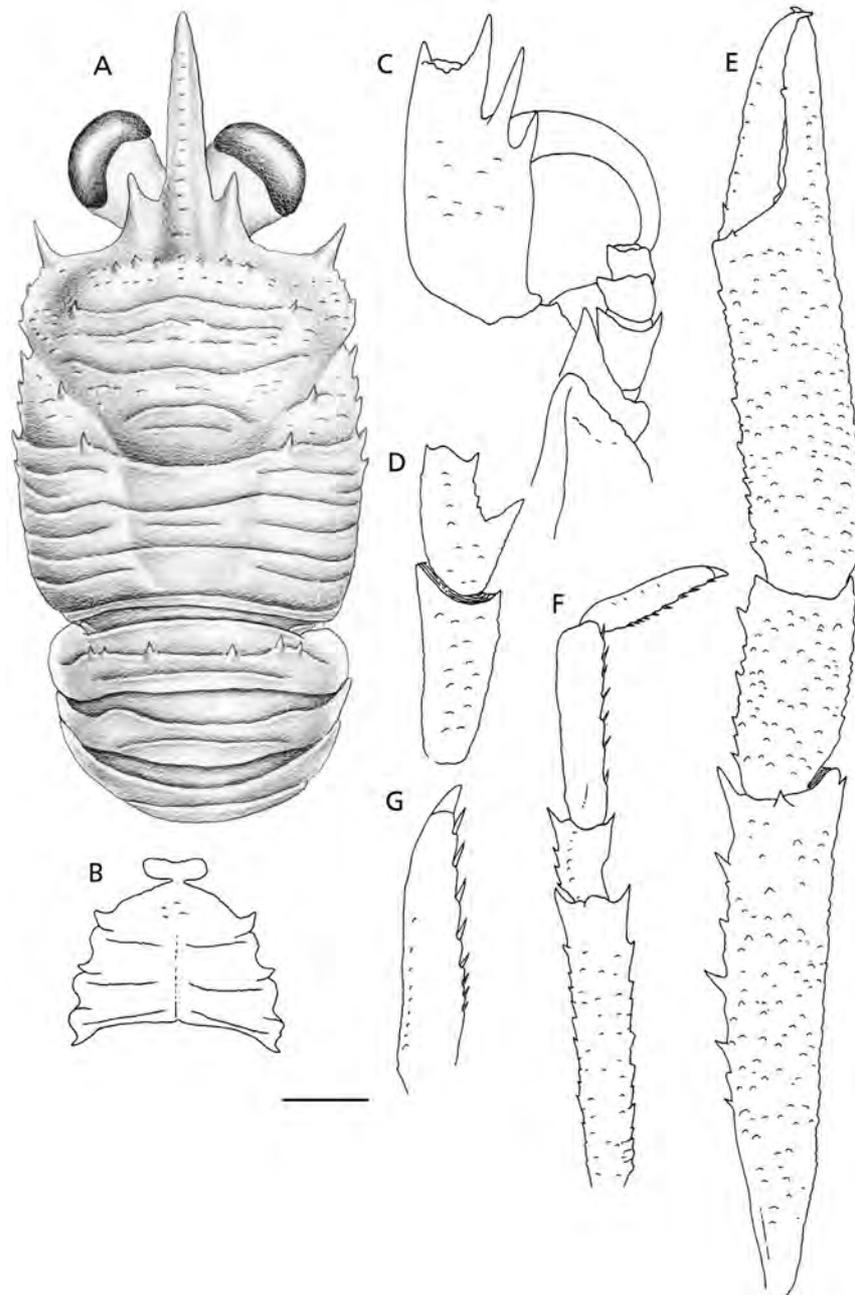
Anterior ridge of second abdominal somite with 6 spines. Second to fourth somites each with 1 transverse stria.

Eyes large, maximum corneal diameter half distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded), about 0.3 carapace length, moderately elongate, over-reaching corneae, with 2 distal spines, mesial spine shorter than lateral spine; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, not reaching end of distolateral spine (Fig. 11C).

Antennal peduncle reduced. First segment with short basally broad distal spine on mesial margin, reaching end of second segment, and reaching base of basal antennular segment; second segment with 2 short subequal distal spines, clearly not reaching end of third segment; third segment unarmed (Fig. 11C).

Ischium of third maxilliped about twice length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 2 spines on flexor margin, median smaller; extensor margin with minute distal spine (Fig. 11D).



**FIG. 11.** *Munida fasciata* n. sp., ♂ 4.7 mm, holotype from stn 1996, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A, B, E, F = 1 mm; C, D, G = 0.5 mm.

**FIG. 11.** *Munida fasciata* n. sp., ♂ 4,7 mm, holotype, stn 1996, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélopède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale. Échelles : A, B, E, F = 1 mm ; C, D, G = 0,5 mm.

Chelipeds subequal, squamous, with a few short uniramous, non-iridescent setae. Merus 1.5 times carapace length, armed with some spines, strongest spine on distal border short, not reaching proximal fourth of carpus. Carpus 2-3 times as long as high, with some spines on mesial border. Palm 1.5 times longer than fingers, with row of very short mesial spines. Fingers distally curving and crossing, ending in a sharp point; movable, with 1 basal short spine on mesial border; cutting edges with small teeth of different sizes (Fig. 11E).

Second pereopod twice carapace length; merus slightly shorter than carapace, about 4.5 times as long as high, about 3.8 times carpus length and 1.6 times as long as propodus; propodus four times longer than high, slightly longer than dactylus (Fig. 11F). Merus with small dorsal marginal spines increasing in size distally, ventral margin with several spines and 1 long distal spine. Carpus with few dorsal spines and 1 distoventral spine. Propodus with 4-8 movable ventral spines. Dactylus slightly curving distally, with 7-9 movable spinules along entire ventral margin (Fig. 11G). Third pereopod similar to second; fourth pereopod shorter than second and third. Merus of fourth pereopod 0.6 length of second pereopod.

COLOUR. — Ground colour of carapace pinkish, with transverse red band along posterior border of carapace, small red spot on lateral border of each anterobranchial region; rostrum whitish. Abdomen, chelipeds and walking legs whitish.

REMARKS. — *Munida fasciata* belongs to the group of species having the following features: five spines on the lateral margins of the carapace behind the cervical groove, large eyes, spines along the anterior ridge of the second abdominal somite, no granules or carinae on the lateral parts of the posterior thoracic sternites, a spiniform rostrum wider than the second segment of the antennal peduncle, the basal segment of the antennular segment with a distolateral spine longer than the distomesial spine, a small antennal peduncle and a row of spinules along the entire ventral border of the dactylus of the walking legs. The new species is closely related to *M. tuberculata* Henderson, 1885 found between 435 and 650 m in New Caledonia, Matthew and Hunter Islands and Fiji Islands (type locality) (Henderson 1888; Macpherson 1994, 2004). The two species are easily distinguished by the following characters:

The anterolateral spine of the carapace is very short in *M. tuberculata*, clearly not reaching the sinus between rostral and supraocular spines. This spine is longer in the new species, nearly reaching the sinus. Furthermore, the hepatic border is more convex in the new species than in *M. tuberculata*.

The colour pattern is very different. In *M. tuberculata* the ground colour of the carapace, the abdomen and pereopods are orange, with one white spot on each bifurcation of the cervical groove, between anterior branchial and cardiac regions; the walking legs have some light orange and whitish bands. In *M. fasciata* the ground colour of the carapace, abdomen and pereopods is pinkish, with a red transverse band on the posterior margin of the carapace, and one red spot on each anterobranchial margin.

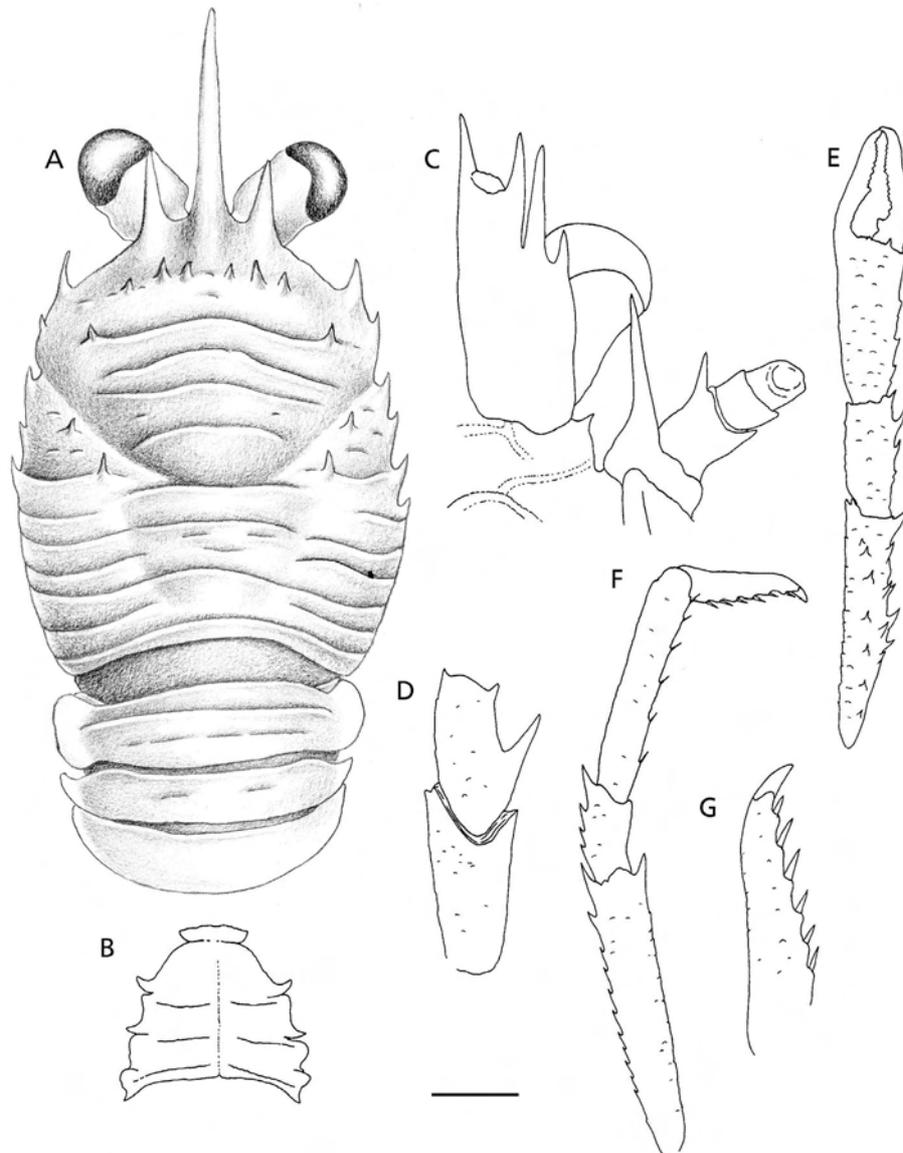
### ***Munida fornacis* n. sp.**

Fig. 12

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1986, 150 m: holotype, ♂ 3.6 mm (MNHN Ga 5288), 1 ♀ 2.7 mm.

ETYMOLOGY. — The name *fornacis* refers to one of the southern hemisphere constellations (the Furnace).

DESCRIPTION. — Carapace as long as wide. Few secondary striae between main transverse ridges. Ridges with very short non-iridescent setae, and few long iridescent uniramous setae. Intestinal region without striae. Gastric region with row of 4-6 pairs of epigastric spines. One parahepatic, 1 anterior branchial, and 1 postcervical spine on each side. Frontal margins oblique. Lateral margins convex. Anterolateral spine moderately long, at anterolateral angle, clearly not reaching level of



**FIG. 12.** *Munida fornacis* n. sp., ♂ 3.6 mm, holotype from stn 1986, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, left cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A = 1.3 mm; B, F = 1 mm; E = 2 mm; C, D, G = 0.5 mm.

**FIG. 12.** *Munida fornacis* n. sp., ♂ 3,6 mm, holotype, stn 1986, (BENTHAUS): A, carapace, vue dorsale; B, plastron sternal; C, vue ventrale de la région céphalique, montrant les pédoncules antennaires et antennulaires; D, troisième maxillipède droit, vue latérale; E, chélipède gauche, vue dorsale; F, première patte marcheuse droite, vue latérale; G, dactyle de la première patte marcheuse droite, vue latérale. Échelles: A = 1,3 mm; B, F = 1 mm; E = 2 mm; C, D, G = 0,5 mm.

sinus between rostrum and supraocular spines. Second marginal spine before cervical groove 0.25 length of preceding spine. Branchial margins with 4 spines. Rostrum spiniform, about 0.6 times as long as remaining carapace, straight and horizontal. Supraocular spines reaching midlength of rostrum, not reaching end of cornea, subparallel, slightly directed upwards (Fig. 12A).

Fourth thoracic sternite smooth. Anterior part of fourth sternite slightly narrower than third; whole posterior margin of third sternite contiguous with fourth sternite (Fig. 12B).

Abdominal somites unarmed. Second somite with 1 transverse stria, and third somite with 1 interrupted transverse stria. Eyes moderately small, maximum corneal diameter less than 0.3 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, overreaching end of corneae, with 2 distal spines, mesial spine overreaching lateral; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, nearly reaching end of distal spines (Fig. 12C).

First segment of antennal peduncle with long distomesial spine nearly reaching end of antennal peduncle; second segment with 2 distal spines, mesial spine slightly longer than lateral spine, reaching end of third segment; third segment unarmed (Fig. 12C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 2 spines on flexor margin, distal smaller; extensor margin with small distal spine (Fig. 12D).

Chelipeds subequal in length, with numerous uniramous iridescent setae denser on mesial and lateral borders. Merus 1.5 times carapace length, twice carpus length, armed with some spines, strongest spine on distal border, reaching proximal fourth of carpus. Carpus twice longer than high, slightly shorter than palm, with few strong spines on mesial and distal margins. Palm slightly shorter than fingers, with row of spines along mesial border, few spines along lateral margin, 1 strong spine near base of fixed finger. Fingers unarmed, distally curving and crossing, ending in a sharp point (Fig. 12E).

Second pereopod 2.4 times carapace length, with some iridescent uniramous setae along dorsal margin; merus shorter than carapace, about 5 times as long as high, about 3 times carpus length and 1.2 times as long as propodus; propodus about 5 times as long as high, about 1.8 times dactylus length (Fig. 12F). Merus with spines on dorsal border, increasing in size distally, ventral margin with long distal spine. Carpus with distodorsal and distoventral spines, some additional spines on dorsal margin. Propodus with 6 movable ventral spines. Dactylus slightly curving distally, with 6-7 movable spinules along entire ventral margin (Fig. 12G). Third pereopod similar to second; fourth pereopod shorter than second and third. Merus of fourth pereopod three-fourth length of second pereopod.

REMARKS. — *Munida fornacis* belongs to the group of species with 4 spines on the branchial lateral margins of the carapace, without carinae or granules on the lateral parts of the thoracic sternites, the oblique frontal margin, the unarmed anterior ridge of the second abdominal somite, and moderately large eyes. The new species is closely related to *M. minuta* Macpherson, 1993 from the Philippines (Macpherson 1993a).

The two species are easily distinguished by the following characters:

The frontal margins are oblique in *M. fornacis*, instead of being transverse in *M. minuta*.

The distomesial spine of the basal antennular segment is longer than the distolateral in *M. fornacis*, whereas these spines are subequal in *M. minuta*.

The distomesial spine of the second segment of the antennal peduncle nearly reaches the end of the antennal peduncle in *M. fornacis*. This spine slightly overreaches the third segment in *M. minuta*.

The fixed and movable fingers of the chelipeds have a lateral and a mesial row of spines, respectively, in *M. minuta*, whereas these rows are absent in *M. fornacis*.

### ***Munida hystrix*** Macpherson & de Saint Laurent, 1991

*Munida hystrix* Macpherson & de Saint Laurent, 1991: 376, fig. 1, pl. 1A.

*Munida hystrix* – Poupin 1996: 22, pl. 10e. — Baba 2005: 247 (key), 265 (list).

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. Stn CA 2008, 280-300 m: 1 ♂ 13.5 mm, 1 ov. ♀ 12.3 mm

DISTRIBUTION. — French Polynesia (Tuamotu Archipelago), at 100-290 m (Macpherson & de Saint Laurent 1991; Poupin 1996). The present material is from Austral Islands, between 280 and 300 m.

***Munida ignea*** n. sp.

Fig. 13

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. Stn DW 1876, 150-160 m: 1 ♂ 5.6 mm, 1 ov. ♀ 7.3 mm, holotype ov. ♀ 7.0 mm (MNHN Ga 5289). — Stn DW 1881, 112-121 m: 1 juv. ♀ ov. (broken). — Stn DW 1968, 100-120 m: 1 ♀ 3.0 mm. — Stn DW 1978, 120-180 m: 1 ♀ 6.0 mm. — Stn. DW 1979, 176-340 m: 1 ♀ ov. (broken).

ETYMOLOGY. — From the Latin, *ignis*, red, in reference to the red colour of the body and appendages.

DESCRIPTION. — Carapace 1.2 times as long as wide. Few secondary striae between main transverse ridges. Ridges with very short non-iridescent setae. Few small scales on intestinal region. Gastric region with 4-5 pairs of epigastric spines. One parahepatic, 1 anterobranchial and 1 postcervical spine on each side. Frontal margins oblique. Lateral margins slightly convex. Anterolateral spine long, at anterolateral angle, not reaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove 0.25 length of preceding spine. Branchial margins with 4 spines. Rostrum spiniform, about half as long as remaining carapace, straight and horizontal. Supraocular spines reaching midlength of rostrum and nearly reaching end of corneae, subparallel, slightly directed upwards (Fig. 13A).

Lateral surfaces of fifth to seventh thoracic sternites with distinct carinae. Fourth sternite smooth. Anterior part of fourth sternite clearly narrower than third; median part of posterior margin of third sternite contiguous with fourth sternite (Fig. 13B).

Second abdominal somite with row of 8-9 spines on anterior ridge. Second and third somites each with 1 transverse stria.

Eyes moderately large, maximum corneal diameter about 0.3 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, slightly overreaching end of corneae, with 2 subequal distal spines; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, not reaching end of distal spines (Fig. 13C).

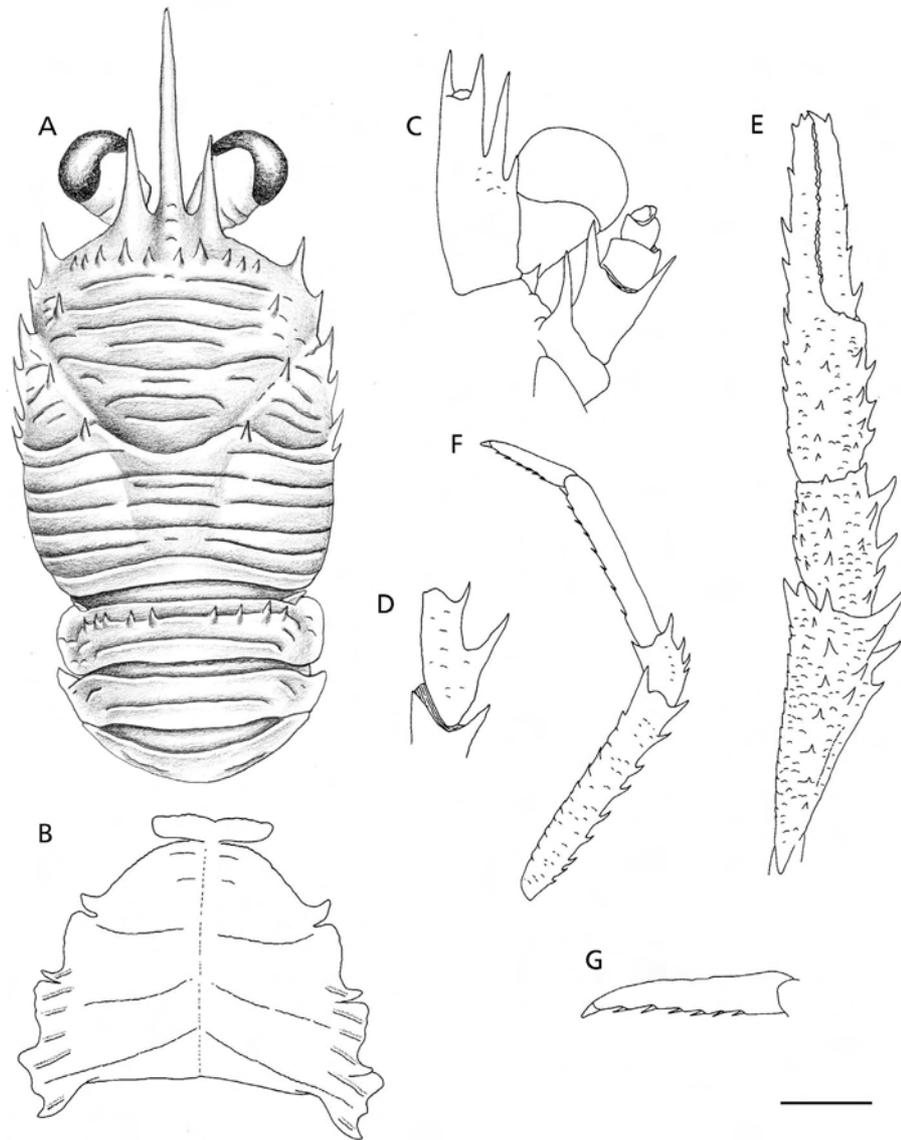
First segment of antennal peduncle with delete long distomesial spine reaching end of third segment; second segment with 2 distal spines, mesial spine as long as lateral spine, slightly exceeding third segment; third segment unarmed (Fig. 13C).

Ischium of third maxilliped about 1.5 times length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 2 well developed spines on flexor margin, distal smaller; extensor margin unarmed (Fig. 13D).

Chelipeds subequal in length, squamous, with numerous uniramous setae denser on mesial borders. Merus twice carpus length; carpus twice longer than wide and as long as palm; palm 0.6 as long as fingers. Merus armed with some spines, strongest spine on distal border, not overreaching proximal quarter of carpus. Carpus with several spines on dorsal and mesial sides. Palm with some spines on dorsal side and along mesial margin, 1 row of lateral spines continued on to the whole length of fixed finger; movable finger with some spines on proximal half of mesial margin. Fingers distally curving and crossing, with a distal spine, ending in a sharp point (Fig. 13E).

Second pereopod about twice carapace length; merus 0.8 times as long as carapace, about 5 times as long as high, about 3 times carpus length and 1.3 times as long as propodus; propodus about 6.5 times as long as high, about twice dactylus length (Fig. 13F). Merus with well developed dorsal marginal spines increasing in size distally, ventral margin with few spines and 1 long distal spine. Carpus with several dorsal spines and 1 distoventral spine. Propodus with 8-10 movable ventral spines. Dactylus slightly curving distally, with 6-7 movable spinules along entire ventral margin, last spine much closer to penultimate spine than end of dactylus (Fig. 13G). Third pereopod similar to second; fourth pereopod shorter than second and third. Merus of fourth pereopod three-fourth length of second pereopod.

COLOUR. — Ground colour of carapace and abdomen orange; striae on carapace whitish. Rostrum and supraocular spines orange. Chelipeds and walking legs orange, without white bands; distal part of fingers white.



**FIG. 13.** *Munida ignea* n. sp., ov. ♀ 7.0 mm, holotype from stn 1876, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, left cheliped, dorsal view; F, left first walking leg, lateral view; G, dactylus of left first walking leg, lateral view. Scale bars: A, E, F = 2 mm; B, C, D, G = 1 mm.

**FIG. 13.** *Munida ignea* n. sp., ov. ♀ 7,0 mm, holotype, stn 1876, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélipède gauche, vue dorsale ; F, première patte marcheuse gauche, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale. Echelles : A, E, F = 2 mm ; B, C, D, G = 1 mm.

REMARKS. — *Munida ignea* belongs to the group of species with 4 spines on the branchial lateral margins of the carapace, distinct carinae on the lateral parts of the thoracic sternites, moderately large eyes, the subequal distal spines on the basal antennular segment, and spines on the anterior ridge of the second abdominal somite. The new species is closely related to *M. lenticularis* Macpherson & de Saint Laurent, 1991 from Tuamotu Archipelago, at 200 m (Macpherson & de Saint Laurent 1991).

The two species are easily distinguished by the following characters:

The basal segment of the antennule (distal spines excluded) clearly overreaches the corneas in *M. lenticularis*, whereas this segment only slightly exceeds the eyes in *M. ignea*.

The colour patterns of the two species are very different. In *M. lenticularis* the body is red, with transverse white bands; each anterior branchial region bears a round red spot, encircled by white, and the chelipeds and walking legs bears whitish and red bands. These white bands and red spots are absent in *M. ignea* (see above).

### ***Munida leptitis*** Macpherson, 1994

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*Munida leptitis* Macpherson, 1994: 487, fig. 27.

*Munida leptitis* – Macpherson 1996:394, fig. 14; 1999: 419; 2004: 263. — Baba 2005: 251 (key), 267 (list).

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. Stn CP 1965, 500-1200 m: 1 ov. ♀ 2.4 mm. — Stn DW 1970, 350-401 m: 3 ♂ 3.6-5.4 mm.

DISTRIBUTION. — New Caledonia, Loyalty Islands, Vanuatu, Wallis and Futuna area, Fiji and Tonga, between 21 and 510 m (Macpherson 1994, 2004; Baba 2005). The present material was collected in the Austral Archipelago, between 350 and 1200 m.

### ***Munida llenasi*** n. sp.

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Fig. 14

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1881, 112-121 m: 1 ♂ 5.2 mm, 1 ov. ♀ 8.0 mm. — Stn CP 1920, 120-203 m: 6 ♂ 4.9-6.5 mm, 5 ov. ♀ 6.3-7.2 mm, 8 ♀ 6.2-6.5 mm. — Stn CP 1922, 150-163 m: 23 ♂ 3.7-6.4 mm, 18 ♀ 3.6-5.8 mm. — Stn DW 1936, 80-100 m: 1 ♂ 9.7 mm, 1 ov. ♀ 9.2 mm. — Stn DW 1946, 100-200 m: 1 ov. ♀ 9.8 mm. — Stn DW 1947, 120-150 m: holotype, ♂ 8.7 mm (MNHN Ga 5290), 1 ov. ♀ 6.6 mm, 2 ♀ 3.7-6.2 mm. — Stn DW 1948, 120-280 m: 2 ov. ♀ 10.0-12.3 mm. — Stn DW 1951, 206-450 m: 1 ♂ 5.1 mm, 1 ov. ♀ 11.0 mm. — Stn DW 1958, 80-150 m: 2 ♂ 5.5-6.2 mm. — Stn DW 1979, 176-340 m: 1 ♂ 8.8 mm, 1 ov. ♀ 7.7 mm, 1 ♀ 6.7 mm. — Stn DW 1985, 100-107 m: 2 ♂ 4.7-8.8 mm. — Stn DW 1986, 150 m: 3 ♂ 6.0-9.6 mm, 2 ♀ 5.7-6.3 mm

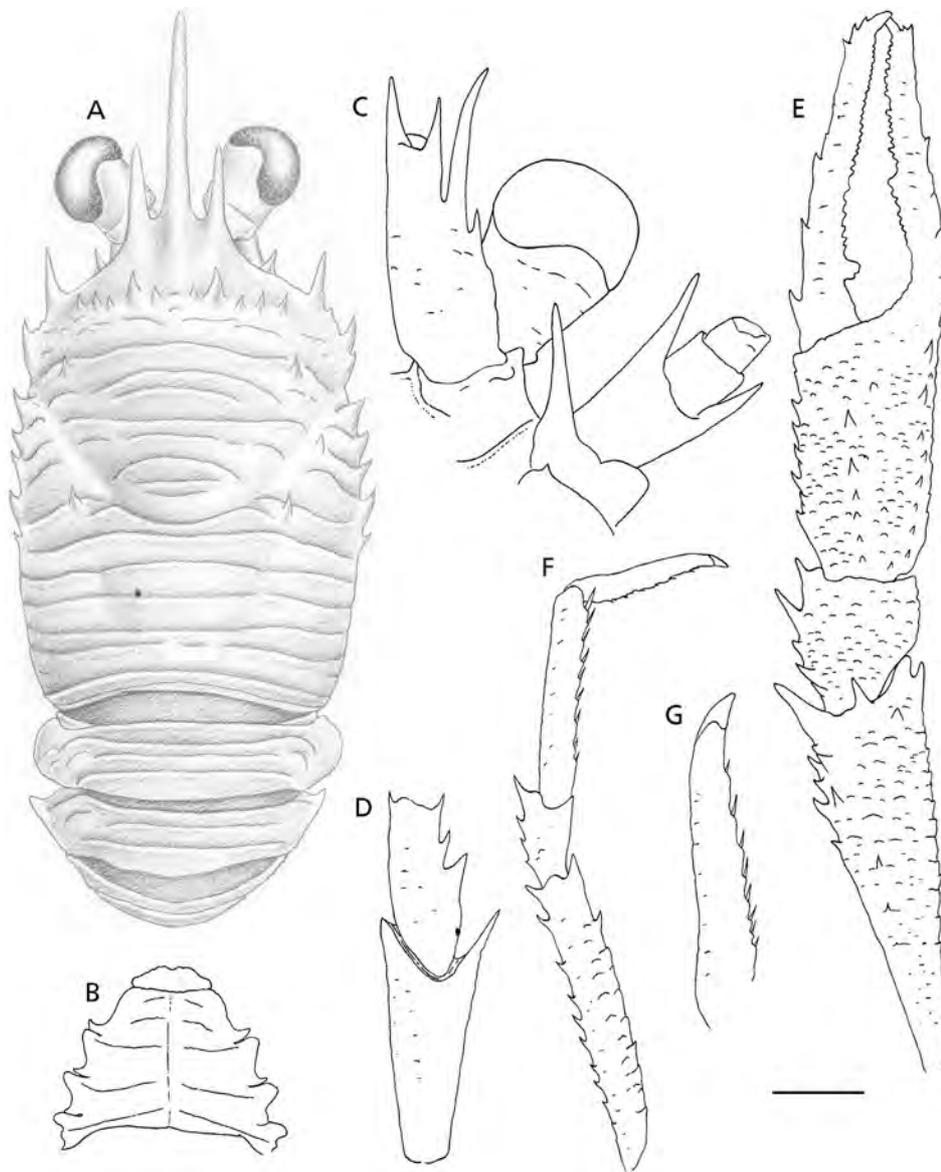
ETYMOLOGY. — This species is dedicated to Josep M. Llenas for his invaluable help in our marine biological studies.

DESCRIPTION. — Carapace nearly 1.3 times as long as wide; ridges with dense, very short, non-iridescent setae, and few long non-iridescent setae. Gastric region with continuous transverse ridges, 2 continuous ridges on posterior half of carapace, others usually interrupted. Few scales on intestinal region. Gastric region with 8-10 epigastric spines. One parahepatic, 1 anterobranchial and 1 postcervical spine on each side. Frontal margins oblique. Lateral margins slightly convex. Anterolateral spine well developed, at anterolateral angle, not reaching level of sinus between rostrum and supraocular spines; 2 marginal spines before cervical groove, anterior 0.5 length of anterolateral spine. Branchial margins with 5 spines. Rostrum half as long as remaining carapace, horizontal, distally directed slightly upwards. Supraocular spines well developed, reaching midlength of rostrum, and not exceeding end of corneae (Fig. 14A).

Thoracic sternites smooth; fourth sternite with few striae. Anterior part of fourth sternite slightly wider than third; whole posterior margin of third sternite contiguous with fourth sternite (Fig. 14B).

Second abdominal somite unarmed. Second and third somites each with 2 transverse striae.

Eyes moderately large, maximum corneal diameter about 0.3 distance between bases of anterolateral spines.



**FIG. 14.** *Munida llenasi* n. sp., ♂ 8.7 mm, holotype from stn 1947, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, lateral view. Scale bars: A = 2.5 mm; B, E, F = 2 mm; C, D, G = 1 mm.

**FIG. 14.** *Munida llenasi* n. sp., ♂ 8,7 mm, holotype, stn 1947, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélipède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale. Échelles : A = 2,5 mm ; B, E, F = 2 mm ; C, D, G = 1 mm.

Basal segment of antennule (distal spines excluded), about 0.3 carapace length, reaching end of corneae, with 2 distal spines, mesial spine longer than lateral spine; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, overreaching distal spines (Fig. 14C).

First segment of antennal peduncle with long distomesial spine clearly over-reaching end of second segment; second segment with 2 long distal spines, mesial spine overreaching end of antennal peduncle; penultimate segment unarmed (Fig. 14C).

Ischium of third maxilliped about twice length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 3 well developed spines on flexor margin, distal smaller, extensor margin with small distal spine (Fig. 14D).

Chelipeds squamous, with some iridescent uniramous setae, denser on mesial borders. Merus as long as carapace, 2.5 times carpus length, carpus slightly longer than high, palm 1.5 times length of carpus, and 0.6 times length of fingers. Merus armed with some spines, strongest spine on distal border short, reaching proximal third of carpus. Carpus with several spines on dorsal side and several well developed spines scattered on mesial border. Palm with several spines scattered on mesial and dorsal sides, spines along lateral border continued on to proximal half of fixed finger, some spines on proximal half of movable finger. Fingers distally curving and crossing, ending in a sharp point (Fig. 14E).

Second pereopod nearly twice carapace length; merus three-quarters carapace length, about 7 times as long as high, 3 times carpus length, and about 1.5 times as long as propodus; propodus 5 times as long as high, about 1.3 times dactylus length (Fig. 14F). Merus with small spines on dorsal border, increasing in size distally, ventral margin with 1 long distal spine. Carpus with few dorsal spines and 1 distoventral spine. Propodus with 9-11 movable ventral spines. Dactylus slightly curving distally, with 8-9 movable spinules along entire ventral margin, distance between ultimate and penultimate spines half distance between tip of dactylus and ultimate spine (Fig. 14G). Third pereopod similar to second; fourth pereopod shorter than second and third. Merus of fourth pereopod 0.6 length of second pereopod.

COLOUR. — Ground colour of carapace and abdominal segments light orange. Rostrum and supraocular spines light orange. Dorsal carapace surface with some red spots. Ocular peduncle proximally red, distally white. Chelipeds and walking legs light orange, with some white transverse bands; tips of chelipeds white.

REMARKS. — *Munida llenasi* is closely related to *M. pectinata* Macpherson & Machordom, 2005, from New Caledonia, between 190 and 240 m, in having the following features: five spines on the lateral margins of the carapace behind the cervical groove, oblique frontal margins, smooth thoracic sternites, unarmed abdominal somites, the spiniform rostrum, a distal spine present on the extensor margin of the merus of the third maxilliped, and the distomesial spine of the basal antennular segment longer than the distolateral spine.

These two species are distinguished by several constant morphological characters:

— The frontal margins of the carapace are more oblique in *M. llenasi* than in *M. pectinata*.

— The distomesial spine of the basal antennal segment overreaches the third segment in *M. pectinata*, whereas in *M. llenasi* this spine never reaches the end of the third segment. Furthermore, the distomesial spine of the second segment clearly overreaches the antennal peduncle in *M. pectinata*, whereas in *M. llenasi* this spine only reaches the end of the peduncle.

### ***Munida longicheles* Macpherson & de Saint Laurent, 1991**

*Munida longicheles* Macpherson & de Saint Laurent, 1991: 409, fig. 11.

*Munida longicheles* – Poupin 1996: 22, pl. 10g. — Baba 2005: 248 (key), 267 (list).

MATERIAL EXAMINED. — Tuamotu Archipelago. Fangataufa Island. Stn. 438, 14.11.94, 22°12.28'S, 138°46.64'W, 410 m, trap. 1 ov. ♀ 5.0 mm. — Stn DW 1970, 350-401 m: 1 ♂ 4.1 mm, 1 ov. ♀ 3.5 mm. — Stn DW 1983, 300-540 m: 2 ♂ 4.8-7.0 mm. — Stn DW 1995, 215-450 m: 1 ♂ 5.1 mm. — Stn DW 2000, 270-480 m: 1 ♂ 3.3 mm. — Stn DW 2009, 320-450 m: 1 ♂ 4.8 mm. — Stn DW 2015, 250-280 m: 1 ov. ♀ 5.7 mm.

DISTRIBUTION. — French Polynesia (Tuamotu Archipelago), at 439 m (Macpherson & de Saint Laurent 1991; Poupin 1996). The present material is from Tuamotu Archipelago and Austral Islands, between 120 and 1200 m.

***Munida oblonga*** n. sp.

Fig. 15

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1887, 750-1000 m: 1 ♀ 4.8 mm. — Stn CP 1892, 742-1000 m: holotype, ♀ 4.4 mm (MNHN Ga 5291).

ETYMOLOGY. — From the Latin, *oblongus*, longer than broad, in reference to the shape of the antennular peduncle.

DESCRIPTION. — Carapace 1.2 times as long as wide. Main transverse striae on posterior part of carapace interrupted on cardiac region. Gastric region with 2 pairs of epigastric spines, and some minute additional epigastric spines. Remaining parts of carapace unarmed in holotype, and 1 postcervical spine on each side in paratype. Lateral margins slightly convex. First anterolateral spine short, situated on frontal margin near anterolateral angle, clearly not reaching level of sinus between rostral and supraocular spines. Second marginal spine before cervical groove slightly smaller than preceding spine. Branchial margins with 5 small spines. Rostrum spiniform, half as long as remaining carapace, straight and horizontal. Supraocular spines not reaching midlength of rostrum and not reaching end of corneae, subparallel, and horizontal (Fig. 15A).

Thoracic sternites smooth, with few short striae. Anterior part of fourth sternite clearly narrower than third; median part of posterior margin of third sternite contiguous with fourth sternite (Fig. 15B).

Second abdominal somite unarmed on anterior ridge. Second and third somites each with 1 transverse stria.

Eyes small, barely wider than eyestalk, maximum corneal diameter 0.25 distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, clearly exceeding end of corneae, with 2 distal spines, mesial spine slightly falling short of end of lateral spine; 2 spines on lateral margin, proximal very short, located at midlength of segment, distal one long, not reaching end of distal spines (Fig. 15C).

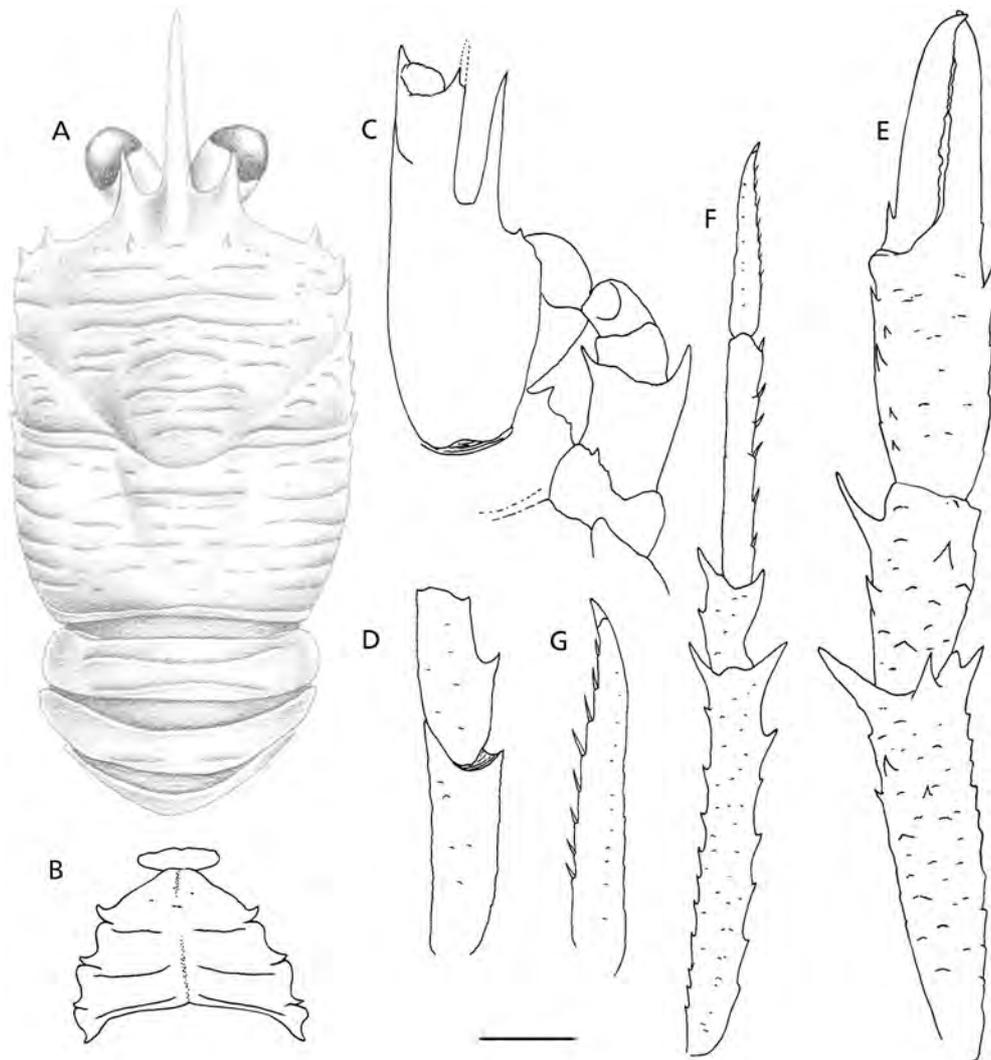
First segment of antennal peduncle with minute distomesial spine; second segment with 2 distal spines, mesial spine shorter than lateral spine, not exceeding third segment; third segment unarmed (Fig. 15C).

Ischium of third maxilliped about 2 times length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 2 spines on flexor margin, distal smaller; extensor margin unarmed (Fig. 15D).

Cheliped with few scales, with few setae denser on mesial borders of articles. Merus shorter than carapace, 1.8 times carpus length; carpus twice long as wide, slightly shorter than palm; palm as long as fingers. Merus armed with some spines, strongest spines on distomesial border, reaching proximal quarter of carpus. Carpus with several spines on dorsal and lateral sides. Palm with row of spines along dorsomesial border, 1 strong spine on lateral border, near base of fixed finger. Fingers unarmed, except proximal spine on movable finger, distally curving and crossing, ending in a sharp point (Fig. 15E).

Second pereopod twice carapace length; merus 0.8 times carapace length, about 7 times as long as high, about 4 times carpus length and 1.5 times as long as propodus; propodus about 7 times as long as high, about 1.3 times dactylus length (Fig. 15F). Merus having dorsal ventral borders each with well developed spines increasing in size distally. Carpus with few dorsal spines and 1 distoventral spine. Propodus with 5-6 movable ventral spines. Dactylus slightly curving distally, with 8 movable spinules along entire ventral margin, ultimate spine very near end of dactylus (Fig. 15G). Merus of fourth pereopod 0.8 length of second pereopod.

REMARKS. — *Munida oblonga* belongs to the group of species bearing small eyes, in which the corneae are barely wider than the eyestalk, with the maximum diameter about 0.25 length of anterior border of carapace between external orbital spines, the branchial margins of the carapace bear 5 small spines, the abdominal segments are unarmed and the distomesial spine of the basal antennular peduncle is slightly shorter than the distolateral spine. The new species is closely related to *M. tiresias* Macpherson, 1994 from New Caledonia at 1430-1470 m (Macpherson 1994) and *M. magniantennulata* Baba & Türkay, 1992, from Lau Basin and off Central Queensland, between 1223 and 2003 m (Baba & Türkay 1992). However,



**FIG. 15.** *Munida oblonga* n. sp., ♀ 4.4 mm, holotype from stn 1892, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, right first walking leg, lateral view; G, dactylus of right first walking leg, mesial view. Scale bars: A, B, E, F = 1 mm; C, D, G = 0.5 mm.

**FIG. 15.** *Munida oblonga* n. sp., ♀ 4,4 mm, holotype, stn 1892, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélipède droit, vue dorsale ; F, première patte marcheuse droite, vue latérale ; G, dactyle de la première patte marcheuse droite, vue médiane. Échelles : A, B, E, F = 1 mm ; C, D, G = 0,5 mm.

the three species are clearly distinguished by the shape of the antennular peduncle. The basal segment of the antennular peduncle is clearly more elongate in *M. oblonga* than in *M. tirsias* and *M. magniantennulata*. The distance from the base of the lateral distal spine and the end of the antennular peduncle (excluding spines) is half the remaining length of the antennular peduncle in *M. oblonga*. This ratio is 0.3 in the other two species. Furthermore, the distomesial spine of the basal segment of the antennular peduncle is minute in *M. oblonga*, whereas this spine is clearly larger in *M. tirsias* and *M. magniantennulata*.

***Munida ocellata*** Macpherson & de Saint Laurent, 1991

*Munida ocellata* Macpherson & de Saint Laurent, 1991: 403, fig. 9, pl. 1 G, H.  
*Munida ocellata* – Poupin 1996: 22, pl. 10h. — Baba 2005: 248 (key), 269 (list).

MATERIAL EXAMINED. — Tuamotu Archipelago. Atoll Mururoa. Austral Archipelago. BENTHAUS. Stn DW 1973, 200-350 m: 1 Stn 472, 10.04.1995, 21°46.9'S, 138°55'W, 285 m: 5 ♂ 10.0-11.7 mm. Fangataufa Island. Stn 491, 26.05.1995, 22°16.7'S, 138°44.3'W, 420 m: 1 ♀ 11.2 mm. ov. ♀ 7.7 mm. — Stn DW 2006, 350-450 m: 1 ♂ 3.3 mm, 1 ov. ♀ 6.2 mm.

DISTRIBUTION. — French Polynesia. Society, Tuamotu and Tubuai Islands, at 439 m (Macpherson & de Saint Laurent 1991), Austral, Gambier and Society Islands, at 200-380 m (Poupin 1996). Present material is from Austral Islands was collected between 200 and 450 m.

***Munida pasithea*** Macpherson & de Saint Laurent, 1991

*Munida pasithea* Macpherson & de Saint Laurent, 1991: 418, fig. 14.  
*Munida pasithea* — Baba 2005: 249 (key), 270 (list).

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. Stn DW 1951, 206-450 m: 1 ♂ 3.7 mm. — Stn DW 1986, 150 m: 9 ♂ 4.5-5.7 mm; 5 ov. ♀ 3.7-5.3 mm.

DISTRIBUTION. — French Polynesia (Tubuai Islands), at 300 m (Macpherson & de Saint Laurent 1991), and Austral Islands, between 110 and 450 m (present records).

***Munida plexaura*** Macpherson & de Saint Laurent, 1991

*Munida plexaura* Macpherson & de Saint Laurent, 1991: 396, fig. 7, pl. 1E.  
*Munida plexaura* – Poupin 1996: 24, pl. 11a. — Macpherson 2000: 419. — Baba 2005: 248 (key), 271 (list).

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. Stn DW 1999, 270-500 m: 1 ♀ 8.1 mm. — Stn DW 2006, 350-450 m: CP 1922, 150-163 m: 1 ♀ 5.0 mm. — Stn DW 1940, 100-460 m: 2 ♂ 2.7 mm. 1 ♀ 14.8 mm. — Stn DW 1983, 300-540 m: 1 ♂ 6.4 mm. — Stn

DISTRIBUTION. — French Polynesia. Tuamotu and Tubuai Islands, at 350-398 m (Macpherson & de Saint Laurent 1991), Tuamotu and Austral Islands (Poupin 1996), Marquesas Islands (Macpherson 2000). Present specimens from the Austral Islands were collected between 110 and 540 m.

***Munida polynoe*** Macpherson & de Saint Laurent, 1991

*Munida polynoe* Macpherson & de Saint Laurent, 1991: 412, fig. 12.  
*Munida polynoe* – Baba 2005: 248 (key), 271 (list).

MATERIAL EXAMINED. — Tuamotu Archipelago. Fangataufa Island. Stn 438, 14.11.94, 22°12.28'S, 138°46.64'W, 410 m: 1 ♀ 6.1 mm. Austral Archipelago. BENTHAUS. Stn DW 2001, 200-500 m: 1 ov. ♀ 9.4 mm.

DISTRIBUTION. — French Polynesia (Tuamotu Islands), at 398 m (Macpherson & de Saint Laurent 1991). Present material from Tuamotu and Austral Islands was collected between 200 and 500 m.

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***Munida profunda*** Macpherson & de Saint Laurent, 1991

*Munida profunda* Macpherson & de Saint Laurent, 1991: 379, fig. 2, pl. 1B.

*Munida profunda* – Poupin 1996: 24, pl. 11b. — Baba 2005: 256 (key), 271 (list).

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. 1956, 600-990 m: 2 ♀ 8.1-10.5 mm. — Stn DW 1958, 80-150 m: 1 ♂ 11.6 mm, 2 ♀ 14.6-15.4 mm. — Stn CP 1966, 636-1200 m: 1 ♂ 11.8 mm. — Stn 1909, 783-1000 m: 2 ♂ 10.2 mm, 2 ♀ 16.5 (photo)-17.2 mm. — Stn CP 1910, 840-1200 m: 7 ♂ 11.0-17.7 mm, 4 ♀ 12.3-14.7 mm. — Stn CP 1911, 900-1300 m: 2 ♂ 14.0-18.2 mm, 1 ov. ♀ 14.5 mm, 3 ♀ 14.8-17.0 mm. — Stn DW 1956, 600-990 m: 2 ♀ 8.1-10.5 mm. — Stn DW 1958, 80-150 m: 1 ♂ 11.6 mm, 2 ♀ 14.6-15.4 mm. — Stn CP 1966, 636-1200 m: 1 ♂ 11.6 mm, 2 ♀ 14.8-15.4 mm. — Stn CP 1967, 600-1200 m: 1 ♂ 19.0 mm, 3 ♀ 12.2-17.7 mm. — Stn DW 1972, 500-1020 m: 1 ♂ 12.6 mm. — Stn DW 1994, 869-884 m: 1 ♂ 12.8 mm.

DISTRIBUTION. — French Polynesia (Tuamotu Archipelago), at 1000-1050 m (Macpherson & de Saint Laurent 1991; Poupin 1996). The present material is from Austral Islands, between 600 and 1300 m.

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***Munida rubella*** Macpherson & de Saint Laurent, 1991

*Munida rubella* Macpherson & de Saint Laurent, 1991: 392, fig. 6, pl. 1D.

*Munida rubella* – Poupin 1996: 24, pl. 11c. — Baba 2005: 255 (key), 273 (list).

MATERIAL EXAMINED. — Tuamotu Archipelago. Fangataufa Island. Stn 440, 15.11.1994, 22°14.06'S, 138°47.74'W, 650 m: 3 ♂ 15.9-25.3mm; 2 ♀ 20.3-21.1 mm. Tuamotu Archipelago. Mururoa Atoll. Stn 482, 13.05.1995, 21°48'S, 138°56.2'W, 510 m: 1 ♂ 16.0 mm.

DISTRIBUTION. — French Polynesia (Society, Tuamotu and Tubuai Islands), at 500-700 m (Macpherson & de Saint Laurent 1991), Tuamotu, Society and Austral Islands, at 500-700 m (Poupin 1996). Present material from Tuamotu and Austral Islands was collected between 510 and 650 m.

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***Munida rubrovata*** Macpherson & de Saint Laurent, 1991

*Munida rubrovata* Macpherson & de Saint Laurent, 1991: 385, fig. 4, pl. 1C.

*Munida rubrovata* – Poupin 1996: 24, pl. 11d. — Baba 2005: 256 (key), 273 (list).

MATERIAL EXAMINED. — Tuamotu Archipelago. Fangataufa Island. Stn 439, 14.11.94, 22°12.87'S, 138°47.58'W, 600 m: 1 ov. ♀ 14.0 mm. — Stn 488, 25.04.95, 22°14.4'S, 138°46.7'W, 510 m, trap. 3 ♂ 14.4-15.3mm; 2 ♀ 12.2-12.7 mm. 478, 12.04.95, 21°51'S, 138°58.3'W, 310 m, trap. 5 ♂ 12.0-13.6 mm; 2 ♀ 11.0-11.8 mm. — Stn 482, 13.05.95, 21°48'S, 138°56.2'W, 510 m, trap. 1 ♂ 16.0 mm. Tuamotu Archipelago. Atoll Mururoa. Stn 476, 11.04.95, 21°51.3'S, 139°01.2'W, 470 m, trap. 2 ♀ 8.7-11.7 mm. — Stn Austral Archipelago. BENTHAUS. Stn DW 1886, 620-1000 m: 1 ♀ 5.5 mm. — Stn DW 1999, 270-500 m: 1 ov. ♀ 13.3 mm.

DISTRIBUTION. — French Polynesia (Society, Tuamotu and Tubuai Islands), at 300-700 m (Macpherson & de Saint Laurent 1991), Tuamotu, Society and Austral Islands, at 300-700 m (Poupin 1996). Present material from Tuamotu and Austral Islands was collected between 270 and 1000 m.

***Munida typhle*** Macpherson, 1994

*Munida typhle* Macpherson, 1994: 549, fig. 60.

*Munida typhle* – Macpherson 1999: 425; 2000: 420. — Baba 2005: 249 (key), 276 (list and references).

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. Stn CP 1910, 840-1200 m: 1 ♂ 2.6 mm, 1 ov. ♀ 7.5 mm. — Stn CP 1911, 900-1300 m: 4 ♂ 6.3-7.9 mm, 1 ov. ♀ 6.3 mm, 2 ♀ 3.6-6.1 mm. — Stn CP 1965, 500-1200 m: 1 ov. ♀ 5.2 mm, 1 ♀ 4.5 mm.

DISTRIBUTION. — New Caledonia, Vanuatu and Marquesas Islands at 850-1410 m (Macpherson 1994, 1999, 2000; Baba 2005). The present material was collected between 500 and 1300 m.

Genus ***PARAMUNIDA*** Baba, 1988***Paramunida pictura*** Macpherson, 1993

*Paramunida pictura* Macpherson, 1993b: 454, figs 4, 14.

*Paramunida pictura* – Macpherson 1996: 416; 2004: 289. — Baba 2005: 301 (key), 302 (list).

MATERIAL EXAMINED. — Austral Archipelago. BENTHAUS. Stn DW 1973, 200-350 m: 1 ♂ 7.4 mm. — Stn DW 1995, 212-450 m: 1 ov. ♀ 8.8 mm. — Stn DW 1999, 270-500 m: ♂ 9.3 mm.

DISTRIBUTION. — New Caledonia, Loyalty Islands, Matthew and Hunter Islands, Chesterfield Islands, Wallis Islands, Fiji and Tonga Islands, between 205 and 710 m (Macpherson 1993b; Baba 2005). The present material is from Austral Islands, between 200 and 500 m.

***Paramunida spatula*** n. sp.

Fig. 16

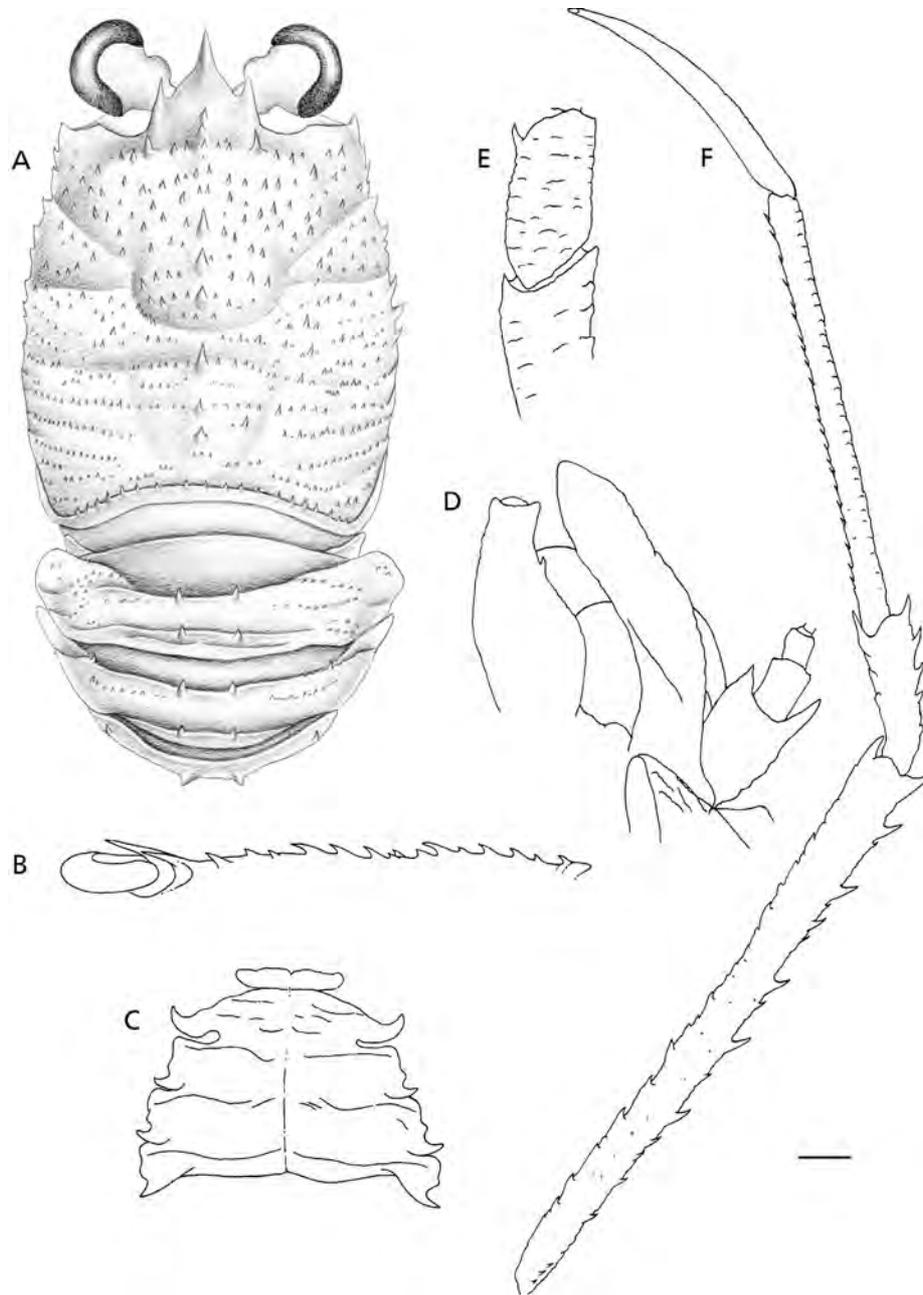
TYPE MATERIAL. — Austral Archipelago. BENTHAUS. Stn DW 1897, 480-700 m: holotype, ♂ 9.4 mm (MNHN Ga 5292).

ETYMOLOGY. — From the Latin, *spatula*, broad, flat tool, in reference to the shape of the anterior prolongation of the first segment of the antennal peduncle

DESCRIPTION. — Carapace, excluding rostrum, as long as broad. Dorsal surface covered with numerous spinules. Gastric region with 2 epigastric spines, and 3 mesogastric spines, anterior-most spine larger than others. Cervical groove distinct. Cardiac and anterior branchial regions slightly circumscribed. Cardiac region with a row of 3 well developed spines in midline, anterior-most thicker than the others. Frontal margin moderately concave. Lateral margins convex, with some spines and iridescent setae on anterior half. Anterolateral spine short, clearly not reaching sinus between rostral and supraocular spines (Fig. 16A). Rostral spine triangular, with thin dorsal longitudinal carina; supraocular spines half as long as and more slender than rostrum (Fig. 16B, C).

Thoracic sternites smooth, fourth sternite with some arcuate striae (Fig. 16D).

Second and third abdominal somites each with 4 well developed spines on anterior ridge and 2 well developed median spines on posterior ridge. Fourth abdominal somite similar to preceding, but posterior ridge with distinct single median spine. Some small spiniform granules between spines.



**FIG. 16.** *Paramunida spatula* n. sp., ♂ 9.4 mm, holotype from stn 1897, (BENTHAUS): A, carapace, dorsal view; B, Upper margin of carapace and rostrum, lateral view; C, sternal plastron; D, ventral view of cephalic region, showing antennular and antennal peduncles; E, left third maxilliped, lateral view; F, left first walking leg, lateral view. Scale bars: A, B, C = 2 mm; D, E = 1 mm; F = 5 mm.

**FIG. 16.** *Paramunida spatula* n. sp., ♂ 9.4 mm, holotype, stn 1897, (BENTHAUS): A, carapace, vue dorsale; B, bord supérieur de la carapace et du rostre, vue latérale; C, plastron sternal; D, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires; E, troisième maxillipède gauche, vue latérale; F, première patte marcheuse gauche, vue latérale. Échelles: A, B, C = 2 mm; D, E = 1 mm; F = 5 mm.

Eyes large, maximum corneal diameter about 0.3 distance between bases of external orbital spines.

Basal segment of antennule (distal spines excluded) slightly exceeding corneae, with distomesial spine shorter than distolateral. Anterior prolongation of first segment of antennal peduncle spatulate, overreaching antennular peduncle by less than 0.25 of its length; second segment (spines excluded) about 1.5 times length of third segment and slightly longer than wide, distomesial and distolateral spines short, not reaching end of third segment; third segment 1.5 times longer than wide and unarmed (Fig. 16E).

Merus of third maxilliped, nearly half ischium length, 1.7 times longer than high, bearing 1 spine on distal portion of flexor margin.

Chelipeds and most walking legs missing. Second left walking leg long and slender (Fig. 16F), with merus 1.7 times longer than carapace, about 13 times as long as high, nearly 4 times carpus length and 1.5 times as long as propodus; propodus 15 times as long as high, about 1.5 times dactylus length (Fig. 16G). Merus with well developed dorsal marginal increasing in size distally, ventral margin with few spines and 1 long distal spine. Carpus with some dorsal spines and 1 distoventral spine. Propodus with 23 movable ventral spines. Dactylus sinuous, ventral border unarmed.

REMARKS. — *Paramunida spatula* is unique in the genus having the anterior prolongation of first segment of the antennal peduncle spatulate.

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Genus **RAYMUNIDA** Macpherson & Machordom, 2000

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***Raymunida limbata*** n. sp.

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Fig. 17

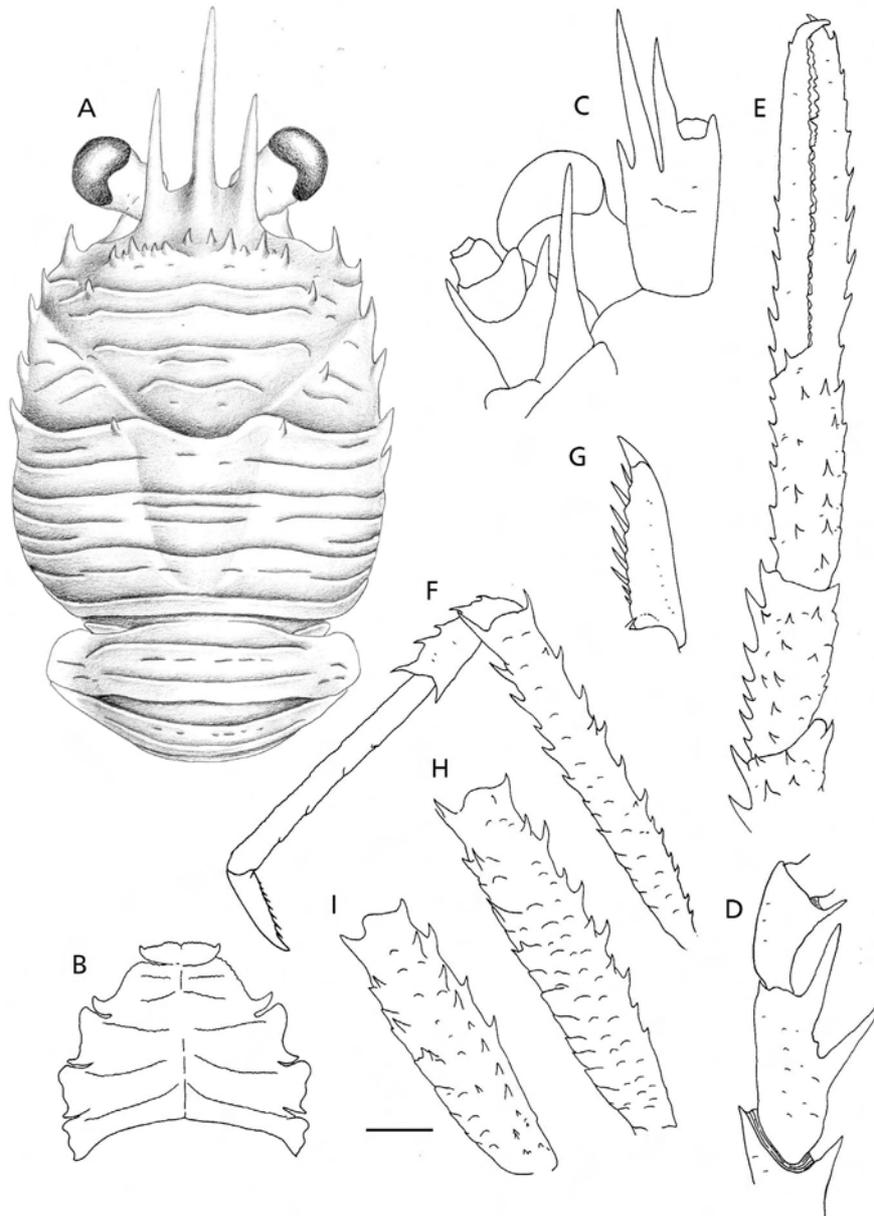
TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn DW 1888, 100-120 m: holotype, ov. ♀ 10.0 mm (MNHN Ga 5293). — Stn DW 1927, 95-105 m: 1 ♂ 4.9 mm, 2 ov. ♀ 8.3-8.7 mm, 1 ♀ 3.2 mm, 1 juv. (broken). — Stn DW 1936, 80-100 m: 1 ♂ 8.5 mm. — Stn DW 1939, 100 m: 1 ♂ 7.6 mm, 1 ov. ♀ 9.5 mm, 2 juv. 2.9-3.7 mm. — Stn DW 1946, 100-200 m: 1 ♂ 4.7 mm, 2 ♀ 6.8-7.1 mm, 1 juv. 2.6 mm. — Stn DW 1985, 100-107 m: 3 ♂ 4.2-5.4 mm, 1 ♀ 3.4 mm. — Stn DW 1986, 150 m: 1 ♀ 7.3 mm. — Stn DW 2013, 80-93 m: 1 juv. 3.3 mm.

ETYMOLOGY. — From the Latin, *limbatus*, bordered in reference to the longitudinal bands along the lateral margins of the carapace.

DESCRIPTION. — Carapace slightly longer than wide, bearing transverse ridges with very short, not iridescent setae, and few long iridescent, simple setae; 2 main transverse striae on posterior part of carapace not interrupted in cardiac region. Gastric region with row of 8-13 epigastric spines. One parahepatic, 1 branchial anterior and 1 postcervical spine on each side. Frontal margins transverse, slightly convex at lateral end of orbit, with or without antennal spine. Lateral margins slightly convex. Anterolateral spine well developed, at anterolateral angle, clearly not reaching level of sinus between rostral and supraocular spines; marginal spine before cervical groove nearly 0.3 length of anterolateral spine. Branchial margins with four spines. Rostrum 0.6 times carapace length, slender, slightly curved upwards, supraocular spines exceeding midlength of rostrum and slightly end of corneas, feebly divergent and horizontal (Fig. 17).

Thoracic sternites smooth; fourth sternite with few striae. Anterior part of fourth sternite slightly wider than third (Fig. 17B).

Abdominal tergites unarmed, with some long iridescent, simple setae. Second to fourth tergites with 1 main continuous transverse stria, preceded by few short scales.



**FIG. 17.** *Raymunida limbata* n. sp., ov. ♀ 10.0 mm, holotype from stn 1888, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, ventral view of cephalic region, showing antennular and antennal peduncles; D, right third maxilliped, lateral view; E, right cheliped, dorsal view; F, left first walking leg, lateral view; G, dactylus of right first walking leg, lateral view; H, merus of left second walking leg, lateral view; I, merus of left third walking leg, lateral view. Scale bars: A = 2.8 mm; B, E, F, H, I = 2 mm; C, D, G = 1 mm.

**FIG. 17.** *Raymunida limbata* n. sp., ov. ♀ 10,0 mm, holotype, stn 1888, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; D, troisième maxillipède droit, vue latérale ; E, chélipède droit, vue dorsale ; F, première patte marcheuse gauche, vue latérale ; G, dactyle de la première patte marcheuse droite, vue latérale ; H, mérus de la seconde patte marcheuse gauche, vue latérale ; I, mérus de la troisième patte marcheuse gauche, vue latérale. Echelles : A = 2,8 mm ; B, E, F, H, I = 2 mm ; C, D, G = 1 mm.

Basal segment of antennule (distal spines excluded), about 0.25 carapace length, reaching end of corneae, with 2 distal spines, mesial spine clearly shorter than lateral spine; 2 spines on lateral margin, proximal one short, located at midlength of segment, distal one long, over-reaching distolateral spine (Fig. 17C).

First segment of antennal peduncle with long distomesial spine exceeding antennal peduncle and not reaching end of basal segment of antennular peduncle (excluding distal spines); second segment with 2 distal spines, mesial distal spine slightly overreaching tip of lateral spine, not overreaching antennal peduncle, 1 small spine at midlength of mesial border; penultimate segment unarmed.

Merus of third maxilliped with 2 long spines on flexor border, and 1 distal spine on extensor margin (Fig. 17D).

Chelipeds with long simple setae more numerous on mesial and lateral borders. Carpus twice as long as high, slightly shorter than palm; fingers nearly twice palm length. Palm with several spines scattered on mesial and dorsal sides and 1 row of dorsolateral spines continued on to entire fixed finger; movable finger with spines on proximal half of mesial margin (Fig. 17E).

Second pereopod about 2.5 times carapace length; merus slightly longer than carapace, about 8 times as long as high, 3 times carpus length and about 1.4 times propodus length; propodus about 10 times as long as high and 2.6 times dactylus length. Merus with dorsal marginal spines increasing in size distally, ventral margin with few distal spines. Carpus with some dorsal spines and 1 distoventral spine. Propodus with 5-6 movable ventral spines (Fig. 17F). Dactylus short, with dorsal margin slightly convex, curving distally, ventral border with 5-8 movable spinules along entire margin (Fig. 17G). Mero-carpal articulation of third walking leg slightly overreaching frontal margin of carapace and not sinus between rostral and supraocular spines. Third pereopod slightly longer than second. Fourth pereopod shorter than second and third; length of merus 0.7 that of second pereopod; merus higher than that of second pereopod, 6 times as long as high, with row of laterodorsal spines in addition to dorsal row of spines (Fig. 17H).

COLOUR. — Ground colour of carapace and abdomen red; wide white band along each lateral margin of carapace; white band on lateral margins of first to third abdominal somites. Rostrum, supraocular and anterolateral spines red. Chelipeds and walking legs red; distal half of fingers white.

REMARKS. — *Raymunida limbata* belongs to the group of species with the mesial spine of the first antennal segment not reaching the end of the basal segment of the antennular peduncle (excluding distal spines), and the mero-carpal articulation of the third walking leg overreaching the frontal margin of the carapace. The new species is very close to *R. erythrina* Macpherson & Machordom, 2001, from Vanuatu and Futuna Island, between 180 and 252 m (Macpherson & Machordom 2001; Baba 2005).

However, these two species are distinguished by the following differences:

— The merus of the third maxilliped is armed with a distal spine on the extensor margin in *R. limbata*, whereas in *R. erythrina* this margin is unarmed.

— The colour pattern of *R. limbata*, observed in all specimens examined, is also quite different from that of *R. erythrina*: body, chelipeds and walking legs reddish (Macpherson & Machordom 2001).

#### Genus **SETANIDA** n. gen.

Type species: *Setanida cristata* n. sp. by present designation.

DIAGNOSIS. — Carapace with transverse ridges, usually granulated. Rostral spine spiniform, clearly overreaching supraocular spines; supraocular spines spiniform, not overreaching end of corneae. Pair of epigastric spines situated directly behind supraocular spines. Pair of postcervical spines present, not followed by additional spines. Frontal margins slightly concave. Anterolateral spines strong. Branchial margins with 4 spines. Second to fourth abdominal tergites unarmed. Telsonal subdivision incomplete, with marginal spinules; endopod of uropods with marginal spinules and

several long spines, some short spinules on dorsal side; exopod with marginal spinules and some lateral spinules. Fourth thoracic sternite with anterior margin wide, moderately concave; median part of posterior margin of third sternite contiguous with fourth sternite; lateral parts of seventh sternite each with 1-2 movable seta-like spines. Orbit visible in dorsal view, ventral margin of orbit with large process, ventro-lateral border ending in acute point, with additional well developed spine. Eyes large, corneae strongly dilated. Antennular basal segment with 2 distal spines; 2 additional spines on lateral margin, subdistal spine longer than proximal spine. Antennal basal segment with distomesial spine short; second segment not reduced, with well developed distal spines. Antennal flagellum longer than chelipeds. Merus of third maxilliped much shorter than ischium, subrhomboidal in lateral view, with strong marginal spine near midlength of flexor border. Chelipeds slender, elongated, usually longer and stouter in male than in female; palm compressed, slightly longer than fingers, mesial margin crested, with row of small spines. Walking legs long and slender; dactyli slender, curving, without lateral keel, flexor margin with spine-like setae. Flexor face of fifth pereopods without brush of plumose setae. In male, movable finger with a dense set of setae on proximal part. Male gonopods absent from first abdominal segment. Epipods absent from pereopods.

ETYMOLOGY. — From the Latin, *seta*, bristle, plus the last syllables of *Munida*. Gender: feminine.

REMARKS. — The new genus is linked to *Agononida* Baba & de Saint Laurent, 1996 and *Crosnierita* Macpherson, 1998. The three genera have distinct transverse striae on the carapace, well developed eyes, males lacking the first pair of gonopods, the rostrum with spiniform median spine flanked on each side by a supraocular spine, and the fifth pereopod without a brush of plumose setae on the chela. *Setanida* may be easily differentiated from *Agononida* and *Crosnierita* by the following characters: (1) lower margin of the orbit visible in dorsal view, ventral margin of orbit with large process, lateral border ending in acute point, with additional well developed spine, (2) lateral parts of seventh thoracic sternite each with 1-2 movable seta-like spines, (3) endopod of uropods with marginal spinules and several long spines, some short spinules on dorsal side; exopod with marginal spinules and some lateral spinules, and (4) the palm of chelipeds compressed, with a crested spinose mesial margin.

***Setanida cristata* n. sp.**

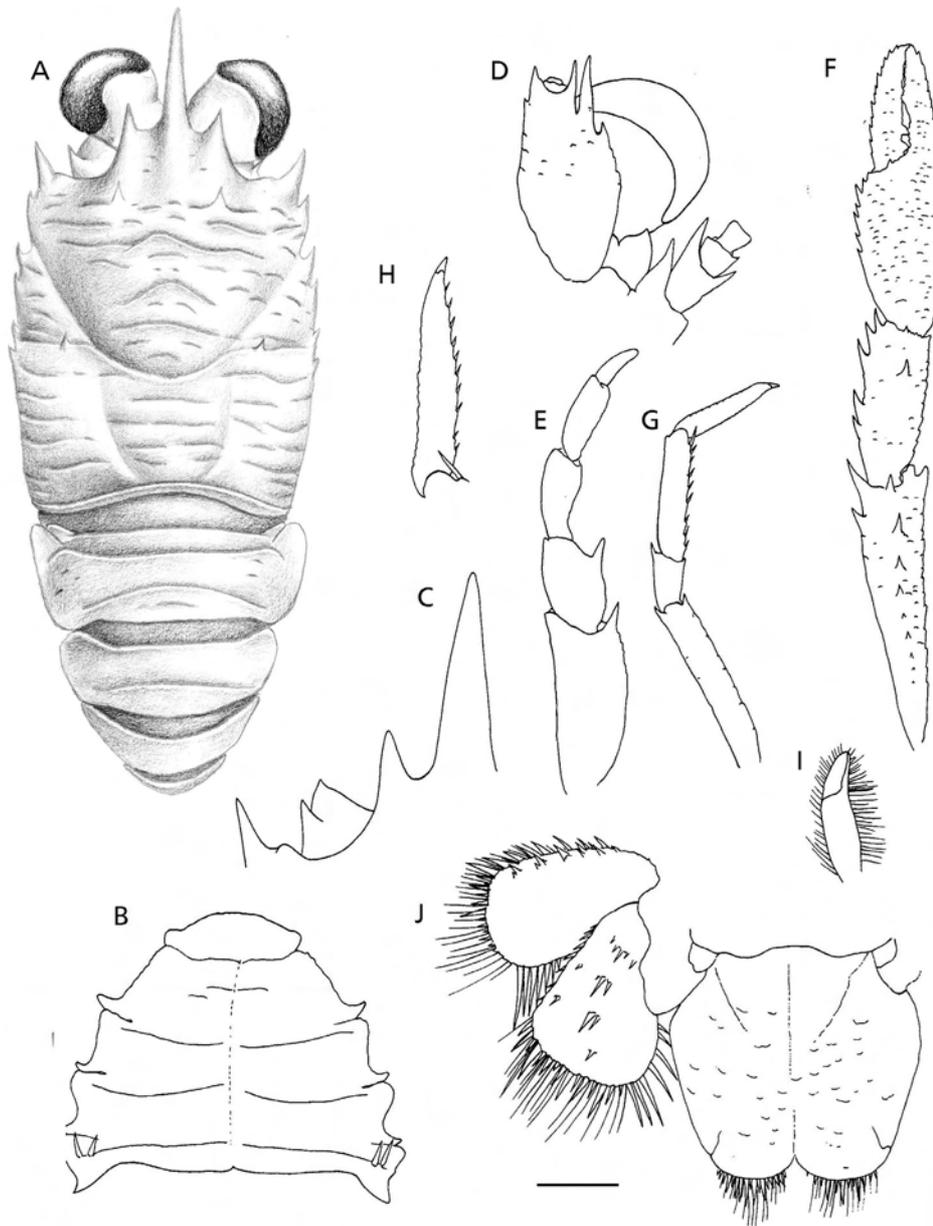
Fig. 18

TYPE MATERIAL. — (holotype and paratypes). Austral Archipelago. BENTHAUS. Stn CP 1920, 120-203 m: 1 ov. ♀ 3.0 mm. — Stn CP 1921, 150-160 m: 1 ♂ 3.2 mm. — Stn CP 1922, 150-163 m: holotype ♂ 2.8 mm (MNHN Ga 5294), 6 ♂ 2.0-3.2 mm, 4 ov. ♀ 2.4-2.9 mm.

ETYMOLOGY. — From the Latin, *cristatus*, crested, in reference to the crested mesial margin along the palm of the chelipeds.

DESCRIPTION. — Carapace slightly longer than wide, slightly convex. Transverse ridges usually interrupted, with few very short, non-iridescent setae. Few scales and secondary striae between main striae. Two epigastric spines, behind supraocular spines, without additional spines on each side. One small postcervical spine on each side. Frontal margins moderately concave, with acute process delimiting orbit. Lateral margins slightly convex. Anterolateral spine moderately short, at anterolateral angle, clearly not reaching level of sinus between rostral and supraocular spines; second marginal spine anterior to cervical groove very small, about 0.25 preceding one. Branchial margins with four small spines. Rostrum spiniform, half as long as remaining carapace, slightly carinated dorsally, straight, and nearly horizontal. Supraocular spines not reaching midlength of rostrum and clearly not overreaching end of corneas, subparallel, directed slightly upwards (Fig. 18A).

Thoracic sternites smooth, with few striae. Anterior part of fourth sternite slightly wider than third. Transverse ridges between fifth, sixth and seventh sternites obtuse, feebly granulated (Fig. 18B).



**FIG. 18.** *Setanida cristata* n. sp., ♂ 2.8 mm, holotype from stn 1922, (BENTHAUS): A, carapace, dorsal view; B, sternal plastron; C, dorsal view of orbit; D, ventral view of cephalic region, showing antennular and antennal peduncles; E, right third maxilliped, lateral view; F, right cheliped, dorsal view; G, right first walking leg, lateral view; H, dactylus of right first walking leg, lateral view; I, right fifth pereopod distal segments; J, telson and left uropods, dorsal view. Scale bars: A = 1.5 mm; F, G = 1 mm; B, C, D, E, H, I, J = 0.5 mm.

**FIG. 18.** *Setanida cristata* n. sp., ♂ 2,8 mm, holotype, stn 1922, (BENTHAUS) : A, carapace, vue dorsale ; B, plastron sternal ; C, vue dorsale de l'orbite ; D, vue ventrale de la région céphalique montrant les pédoncules antennaires et antennulaires ; E, troisième maxillipède droit, vue latérale ; F, chélipède droit, vue dorsale ; G, première patte marcheuse droite, vue latérale ; H, dactyle de la première patte marcheuse droite, vue latérale ; I, segments distaux du cinquième péréiopode droit ; J, telson et uropode gauche, vue dorsale. Échelles : A = 1,5 mm ; F, G = 1 mm ; B, C, D, E, H, I, J = 0,5 mm.

Abdominal somites unarmed. Second and third somites each with 1 transverse stria. Fourth somite without striae. Eyes large, maximum corneal diameter half distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) about 0.3 carapace length, elongate, nearly reaching end of corneae, with 2 short distal spines, mesial spine slightly shorter than lateral spine; lateral margin with spines, proximal shorter than distal (Fig. 18D).

First segment of antennal peduncle with distomesial spine, reaching end of second segment; second segment with 2 strong distal spines, distomesial spine slightly overreaching penultimate segment; third segment with small distolateral spine; ultimate segment unarmed (Fig. 18D).

Ischium of third maxilliped about 2 times length of merus measured along dorsal margin, distoventrally bearing spine. Merus with 1 well developed median spine on flexor margin; extensor margin unarmed (Fig. 18E).

Chelipeds about 2.6 times carapace length, squamous, with few setae denser on mesial borders of merus and carpus. Merus armed with some spines, strongest spine on distal border short, not overreaching proximal quarter of carpus. Carpus as long as palm, with several spines on dorsal side. Palm compressed, slightly longer than fingers, mesial margin crested, with row of small spines. Fingers distally curving and crossing, ending in a sharp point, movable finger with row of small spines along mesial border (Fig. 18F).

Second pereopod about 1.8 times carapace length; merus 0.7 times as long as carapace, about 6.3 times as long as high, about 3 times carpus length and 1.5 times propodus length; propodus 4.5 times as long as high, slightly longer than dactylus (Fig. 18G). Merus with few short spines along extensor and flexor margins, 1 well developed distal spine on each margin. Carpus with 1 spine on extensor and flexor border. Propodus with 9-10 movable spinules along flexor border. Dactylus slender, with dorsal margin slightly convex, slightly curving distally, with 9-10 movable spinules along entire flexor margin (Fig. 18H). Third and fourth pereopod shorter than second; dactylus unarmed; merus 0.6 as long as that of second pereopod. Epipods absent from pereopods.

REMARKS. — The genus contains only the type species.

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