

## Crustacea Decapoda : New records of species of the genera *Munida* Leach, 1820 and *Paramunida* Baba, 1988 (Galatheidae) from New Caledonia, with the descriptions of three new species

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### ABSTRACT

Three new galatheids (*Munida parca*, *M. pygmaea* and *Paramunida aliena*) are described and illustrated from specimens collected during recent cruises carried out off New Caledonia. The occurrence of *Munida heteracantha* Ortmann, 1892 and *M. gilii* Macpherson, 1993 is also reported for the first time in the area.

### RÉSUMÉ

**Crustacea Decapoda : Récoltes d'espèces des genres *Munida* Leach, 1820, et *Paramunida* Baba, 1988, (Galatheidae) non encore signalées de Nouvelle-Calédonie. Descriptions de trois espèces nouvelles.**

Deux espèces nouvelles de *Munida* (*M. parca*, *M. pygmaea*) et une de *Paramunida* (*P. aliena*) provenant de Nouvelle-Calédonie, sont décrites et illustrées. *M. parca*, proche de *M. pagesi* Macpherson, 1994, se différencie facilement par l'armature du pédoncule antennaire. *M. pygmaea* est proche de *M. microps* Alcock, 1894, et de *M. eclepsis* Macpherson, 1994, mais se différencie par la taille des yeux, l'armature de la carapace et du pédoncule antennaire. *P. aliena* se distingue des autres espèces du genre *Paramunida* par l'armature de la carapace et de l'abdomen. Par ailleurs deux espèces de *Munida* (*M. heteracantha* Ortmann, 1892, et *M. gilii* Macpherson, 1993) sont signalées pour la première fois en Nouvelle-Calédonie.

### INTRODUCTION

Since the early 1980s numerous cruises have been carried out in the waters off New Caledonia and adjacent islands (RICHER DE FORGES, 1990). These cruises produced a large number of specimens, belonging to more than

80 species of the genera *Munida* Leach, 1820 and *Paramunida* Baba, 1988 (BABA, 1994; MACPHERSON, 1993b, 1994). After the last cruise included in MACPHERSON (1994) - SMIB 6, March 1990 - additional expeditions have been carried out in the area (see RICHER DE FORGES & CHEVILLON and RICHER DE FORGES *et al.*, this volume) producing additional and interesting samples. The study of the material collected during these cruises revealed the presence of two species not yet cited in the area, and the existence of two, small, new species of the genus *Munida*. Furthermore, one interesting specimen collected in 1985 during the cruise MUSORSTOM 4, is also included and considered here as a new species belonging to the genus *Paramunida*.

The types of the new species and other material have been 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 (ZARIQUIEY-ALVAREZ, 1952; MACPHERSON & de SAINT LAURENT, 1991). Furthermore, in order to avoid repetitious descriptions, only distinctive characters have been included in the text.

### *Munida gillii* Macpherson, 1993

*Munida gillii* Macpherson, 1993a : 429, fig. 2.

MATERIAL EXAMINED. — New Caledonia. BERYX 11 : stn 45, 23°40'S, 168°01'E, 270-290 m, 20.10.1992 : 1 ov. ♀ 6.0 mm.

BATHUS 1 : stn 640, 21°52'S, 166°47'E, 174 m, 10.03.1993 : 1 ov. ♀ 5.0 mm. — Stn 652, 21°17'S, 165°57'E, 110-190 m, 12.03.1993 : 1 ov. ♀ 4.8 mm. — Stn 668, 20°57'S, 165°34'E, 205-219 m, 14.03.1993 : 2 ♂ 5.3 and 5.7 mm; 1 ♀ 6.0 mm. — Stn 674, 20°48'S, 165°19'E, 105-110 m, 14.03.1993 : 1 ov. ♀ 4.9 mm; 1 ♀ 7.0 mm. — Stn 675, 20°48'S, 165°19'E, 100-120 m, 15.03.1993 : 1 ov. ♀ 5.1 mm. — Stn 706, 21°42'S, 166°34'E, 247-252 m, 19.03.1993 : 1 ♂ 5.6 mm; 1 ov. ♀ 3.8 mm. — Stn 712, 21°44'S, 166°35'E, 210 m, 19.03.1993 : 2 ♂ 5.6 and 6.1 mm; 1 ov. ♀ 5.2 mm.

HALIPRO 1 : stn 852, 21°44'S, 166°36'E, 253-266 m, 19.03.1994 : 2 ov. ♀ 5.4 and 6.8 mm.

BATHUS 4 : stn 954, 21°44'S, 166°35'E, 250-255 m, 11.08.1994 : 1 ov. ♀ 6.6 mm.

REMARKS. — The specimens examined agree with the type material collected in Philippines, between 122 and 134 m (MACPHERSON, 1993a). The examination of this abundant material shows that the size of the distal spines of the basal antennular segment is not a valid character to distinguish this species from its closest relative, *M. babai* Tirmizi & Javed, 1976 from South Africa and Madagascar (TIRMIZI & JAVED, 1976; BABA, 1990). Some specimens have the distomesial spine shorter than the distolateral (as in the types), though other specimens have these spines of similar size (as in *M. babai*). This new occurrence extends the geographical range of the species to the south, in depths between 100 and 360 m.

### *Munida heteracantha* Ortmann, 1892

*Munida heteracantha* Ortmann, 1892 : 255, pl. 11, figs 12, 12i, 12k. — MACPHERSON & BABA, 1993 : 393, fig. 6.

MATERIAL EXAMINED. — New Caledonia. BATHUS 1 : stn 673, 20°48'S, 165°19'E, 170 m, 14.03.1993 : 1 ♂ 6.2 mm.

REMARKS. — The specimen examined agrees quite well with the type and additional material collected from other areas (MACPHERSON & BABA, 1993). The species has been previously cited from Japan, off Hong Kong, the Philippines and Indonesia, between 68 and 222 m. This new occurrence extend its geographical range to the south.

### *Munida parca* sp. nov.

Fig. 1

MATERIAL EXAMINED. — New Caledonia. BATHUS 1 : stn 687, 20°34'S, 165°07'E, 408-440 m, 16.03.1993 : 1 ov. ♀ 3.6 mm (MNHN-Ga 3781). — Stn 705, 21°02'S, 165°37'E, 350-400 m, 18.03.1993 : 2 ov. ♀ 3.4 and 4.3 mm (MNHN-Ga 3779, 3780).

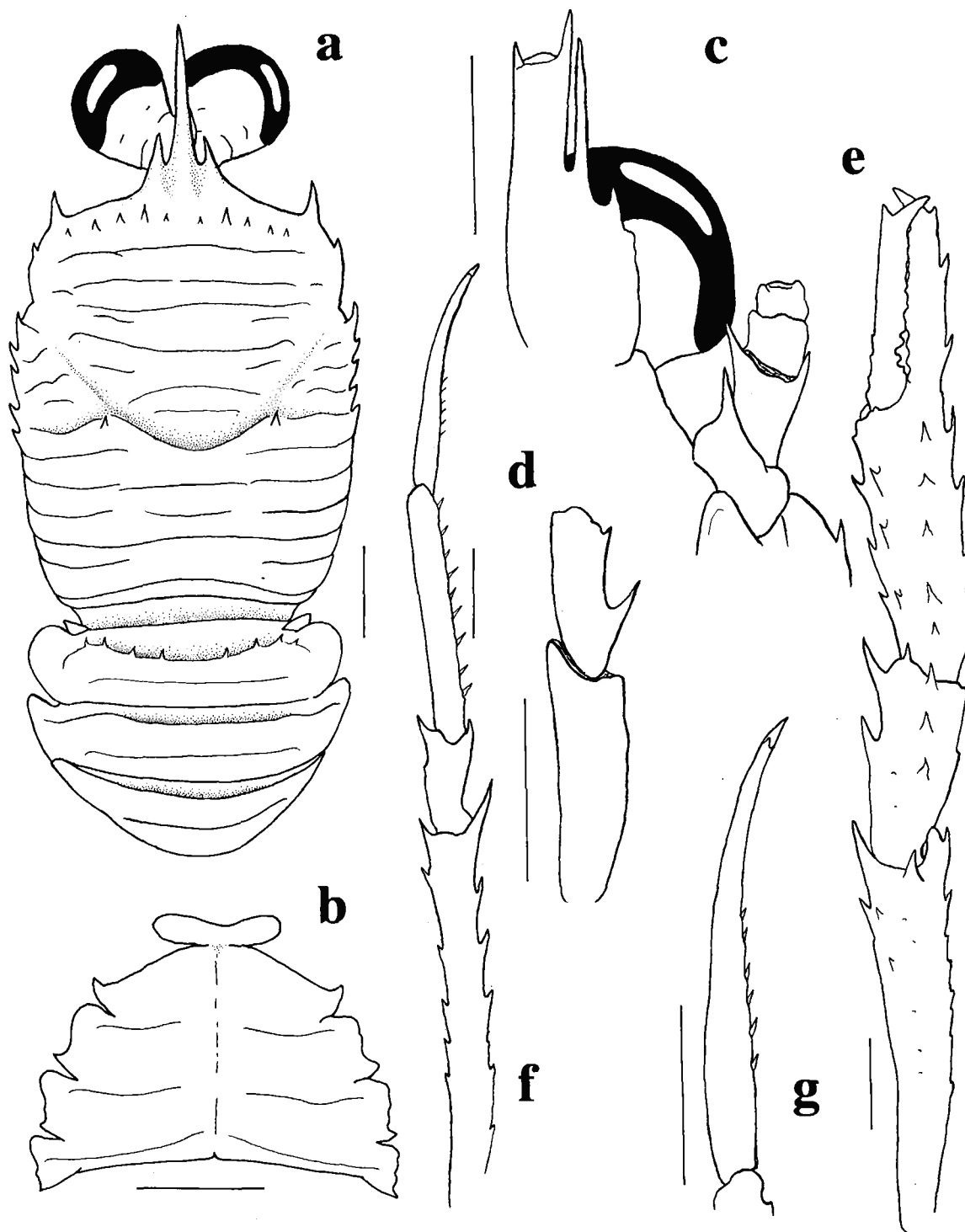


FIG. 1. — *Munida parca* sp. nov., ov. ♀ 4.3 mm, holotype from Stn 705 (BATHUS 1): **a**, carapace, dorsal view; **b**, sternal plastron; **c**, ventral view of cephalic region, showing antennula and antennal peduncles; **d**, right third maxilliped, lateral view; **e**, left cheliped, dorsal view; **f**, right first walking leg, lateral view; **g**, dactylus of right first walking leg, lateral view. Scales = 1 mm.

TYPES. — The ovigerous female of 4.3 mm from BATHUS 1, Stn 705 (MNHN-Ga 3779) has been selected as holotype, the other specimens are paratypes.

ETYMOLOGY. — From the Latin, *parcus*, frugal, slight, in reference to the small size of the species.

DESCRIPTION. — Carapace without secondary striae between principal striae. Gastric region with row of epigastric spines. One postcervical spine on each side. Frontal margins moderately oblique. Rostrum spiniform, horizontal, slightly less than 1/2 carapace length. Supraocular spines short, clearly not reaching midlength of rostrum. External orbital spine well developed, situated near anterolateral angle, not reaching level of sinus between rostrum and supraocular spine. Second marginal spine before cervical groove very small. Branchial margins with 5 spines. Thoracic sternites smooth, without striae; anterior part of fourth thoracic sternite slightly narrower than third sternite. Second abdominal segment with 6-8 spines along anterior transverse ridge. Second and third segments each with one transverse stria. Eye large, maximum corneal diameter about 1/2 length of anterior border of carapace between bases of external orbital spines. Basal segment of antennule (distal spines excluded) long, clearly overreaching cornea, with distomesial spine clearly shorter than distolateral. First segment of antennal peduncle with distomesial spine reaching end of second segment; distomesial spine of second segment not exceeding third segment. Extensor margin of merus of third maxilliped unarmed; flexor margin with two spines. Distomesial spine of cheliped merus of moderate size, not reaching midpoint of carpus. Movable finger of chelipeds with basal and distal spine, fixed finger with some spines along lateral border. First walking leg slightly more than twice carapace length. Dactylus of walking legs as long as propodus, unarmed on distal third of ventral margin.

REMARKS. — *Munida parca* is close to *M. pagesi* Macpherson, 1994, from New Caledonia (MACPHERSON, 1994) in having 5 spines on the lateral margins of the carapace behind cervical groove, eyes large, the second abdominal segment armed with spines along the anterior ridge, the lateral parts of the posterior thoracic sternites without granules, rostrum spiniform and the distolateral spine of the basal antennular segment longer than the distomesial. However, both species can be distinguished by several aspects :

— The anterior part of the fourth thoracic sternite is clearly narrower than the preceding sternite in *M. pagesi*, whereas this part is nearly as wide as the third sternite in *M. parca*.

— The distomesial spine of the second segment of the antennal peduncle is long and clearly overreaches the antennal peduncle in *M. pagesi*, whereas in the new species this spine is very short and only reaches the end of the third segment.

— The movable finger of the chelipeds has several median spines along the mesial border in *M. pagesi*, these spines are absent in *M. parca*.

DISTRIBUTION. — New Caledonia, between 350 and 440 m.

### *Munida pygmaea* sp. nov.

Fig. 2

MATERIAL EXAMINED. — **New Caledonia.** BERYX 11 : stn 9, 24°52'S, 168°22'E, 635-680 m, 15.10.1992 : 1 ♂ 5.4 and 6.0 mm; 2 ♀ 3.8 to 6.9 mm (MNHN-Ga 3782, 3783).

BATHUS 3 : stn 795, 23°46'S, 169°49'E, 735-755 m, 26.11.1993 : 1 ♀ 7.6 mm (MNHN-Ga 3784).

TYPES. — The female of 6.9 mm from BERYX 11, Stn 9 (MNHN-Ga 3782) has been selected as holotype, the other specimens are paratypes.

ETYMOLOGY. — From the Latin, *pygmaeus*, pygmy, in reference to the small size of the species.

DESCRIPTION. — Carapace with hepatic and anteriorbranchial regions squamate. Rest of carapace with few secondary striae between principal striae. Intestinal region without scales. Gastric region with row of small epigastric spines. Frontal margins slightly oblique. Rostrum spiniform, slightly carinated and less than 1/2 carapace length. Supraocular spines short, not reaching midlength of rostrum. External orbital spine short, situated on frontal border, near anterolateral angle, clearly not reaching level of sinus between rostrum and supraocular spines. Second marginal spine before cervical groove small. Branchial margins with 5 small spines.

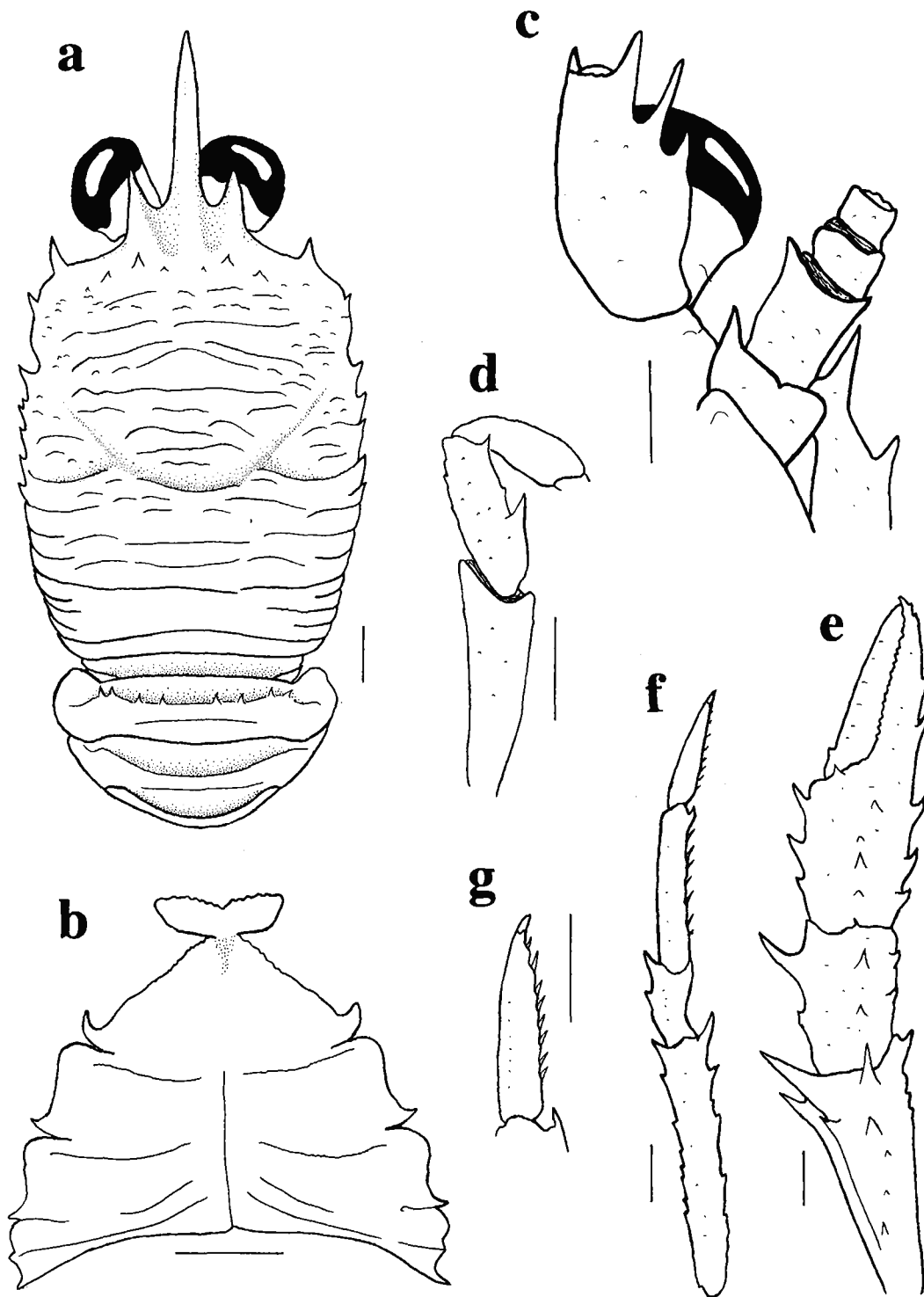


FIG. 2. — *Munida pygmaea* sp., nov. ♀ 6.9 mm, holotype from Stn 9 (BERYX 11): **a**, carapace, dorsal view; **b**, sternal plastron; **c**, ventral view of cephalic region, showing antennula and antennal peduncles; **d**, right third maxilliped, lateral view; **e**, right cheliped, dorsal view; **f**, right first walking leg, lateral view; **g**, dactylus of right first walking leg, lateral view. Scales = 1 mm.

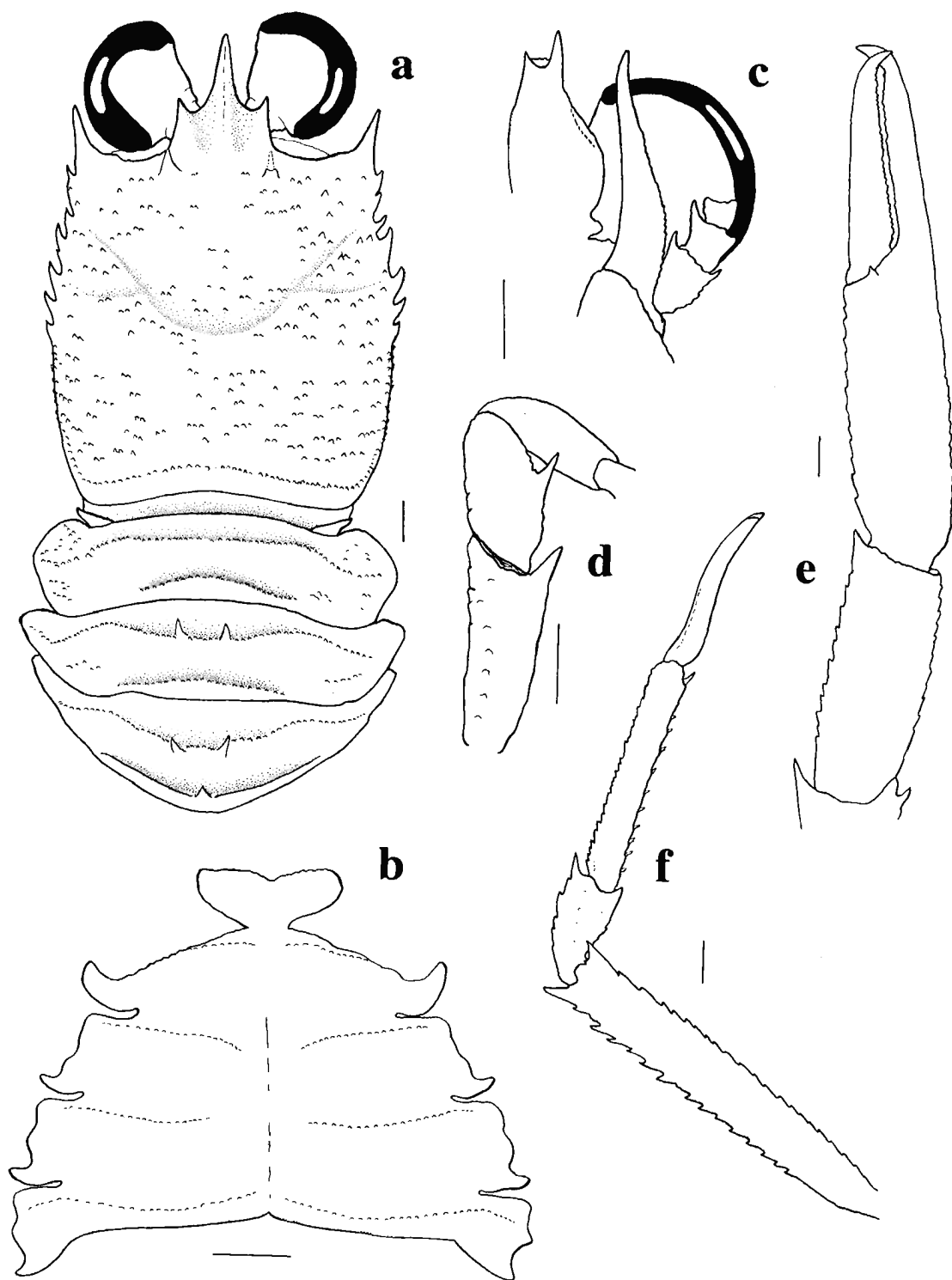


FIG. 3. — *Paramunida aliena* sp. nov., ov. ♀ 7.8 mm, holotype from Stn 200 (MUSORSTOM 4): a, carapace, dorsal view; b, sternal plastron; c, ventral view of cephalic region, showing antennula and antennal peduncles; d, right third maxilliped, lateral view; e, right cheliped, dorsal view; f, right first walking leg, lateral view. Scales = 1 mm.

Thoracic sternites smooth, without striae; anterior part of fourth thoracic sternite clearly narrower than third sternite. Second abdominal segment with 6-8 spines along anterior transverse ridge. Second and third segments each with one transverse stria. Eye moderately large, maximum corneal diameter about 1/3 length of anterior border of carapace between bases of external orbital spines. Basal segment of antennule (distal spines excluded) slightly overreaching cornea, with distomesial spine shorter than distolateral. First segment of antennal peduncle with short distomesial spine, clearly not reaching end of second segment; distomesial spine of second segment short not exceeding third segment. Merus of third maxilliped bearing 2 spines on flexor margin; extensor border unarmed. Chelipeds setose; distomesial spine of merus strong, nearly reaching midpoint of carpus; movable finger with basal and distal spine, fixed finger with some spines along lateral border. First walking leg about 1.5 times carapace length. Dactylus of walking legs slightly shorter than propodus, with spinules along entire ventral margin.

REMARKS. — The new species resembles *M. microps* Alcock, 1894, from the Indian and Western Pacific waters (ALCOCK, 1894; BABA, 1988, 1994; MACPHERSON, 1994) and *M. eclipsis* Macpherson, 1994 from New Caledonia (MACPHERSON, 1994) in having 5 spines on the lateral margins of the carapace behind the cervical groove; eyes large; the second abdominal segment armed with spines along the anterior ridge; the lateral parts of the posterior thoracic sternites without granules; rostrum spiniform; and the distolateral spine of the basal antennular segment longer than the distomesial. However, *M. microps* and *M. pygmaea* can be distinguished by several aspects :

— The external orbital spine of the carapace is situated on the frontal margin in the new species, whereas it is placed on the anterolateral angle in *M. microps*.

— The cornea is scarcely broader than the stalk in *M. microps*; clearly wider than the stalk in the new species.

— The distomesial spine of the second segment of the antennal peduncle overreaches the peduncle in *M. microps*, whereas it does not overreach the end of the third segment in the new species.

— The chelipeds are more massive in the new species than in *M. microps*. Furthermore, the distomesial spine of the merus of the chelipeds is short in *M. microps* and never reaches the midlength of the carpus. This spine is large and reaches this level in the new species.

*M. pygmaea* is differentiable from *M. eclipsis* by the following aspects :

— The external orbital spine of the carapace is short and situated on the frontal margin in the new species, whereas it is well developed and placed on the anterolateral angle in *M. eclipsis*.

— The antennal peduncles are quite different. The distomesial spines of the first and second segments of the antennal peduncle are very short in the new species, whereas they are quite long in *M. eclipsis*.

DISTRIBUTION. — New Caledonia, between 635 and 755 m.

*Paramunida aliena* sp. nov.

Fig. 3

MATERIAL EXAMINED. — New Caledonia. MUSORSTOM 4 : stn 200, 18°53.8'S, 163°14.1'E, 545 m, 20.09.1985 : 1 ov. ♀ 7.8 mm (MNHN-Ga 3778).

ETYMOLOGY. — From the Latin, *alienus*, strange, not related, in reference to the strong differences between the new species and the other species of the genus.

DESCRIPTION. — Carapace as long as broad. Dorsal surface smooth, with some granules, more numerous and acute on hepatic and branchial regions. One epigastric spine behind each supraocular spine, rest of carapace without true spines or spinules. Cardiac region slightly circumscribed. Frontal margins transverse. Rostrum triangular, upturned, slightly carinated and less than 1/2 carapace length. Supraocular spines short, not reaching midlength of rostrum and more slender than rostrum. External orbital spine large, situated on anterolateral angle, nearly reaching end of supraocular spines. One or 2 small marginal spines before cervical groove. Branchial margins with 5 well developed spines and some spiniform granules. Thoracic sternites smooth, without striae. Second abdominal segment without spines along anterior transverse ridge; third and fourth segments with 2 median spines on anterior ridge; one median spine on posterior ridge of fourth segment. Second to fourth segments without secondary transverse striae or scales; anterior and posterior transverse ridges granulated. Eye large, maximum corneal diameter

about 1/2 distance between bases of external orbital spines. Basal segment of antennule (distal spines excluded) not exceeding cornea, with distomesial spine shorter than distolateral; lateral border without spines. Anterior prolongation of first segment of antennal peduncle slightly overreaching antennular peduncle; second segment with 2, evenly tapering, distal spines, distomesial spine stronger than distolateral and clearly not reaching end of third segment; third segment with one distomesial spine, nearly reaching end of fourth segment. Second segment of antennal peduncle (spines excluded) about 1.4 times length of third segment, 1.3 times longer than wide; third segment as long as wide. Carpus of third maxilliped with one median spine on flexor border, extensor margin unarmed. Chelipeds smooth, spines only present on mesial and ventral margins of articles. Dactylus of walking legs without spines along ventral border. First walking leg 2.5 times carapace length, with propodus about 6 times as long as wide and about 1.5 times dactylus length.

REMARKS. — *P. aliena* clearly differs from the other species of the genus in the armature of the carapace and abdominal segments. In the new species the carapace is smooth, with some granules, the abdominal segments are also smooth and have only 2 median spines on the anterior transverse ridge of the third and fourth segments and one median spine on the posterior ridge of the fourth segment. These characters are not present in the other species of the genus.

DISTRIBUTION. — New Caledonia, in 545 m.

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