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Crustacea Decapoda : Species of the genus *Paramunida* Baba, 1988 (Galatheidae) from the Philippines, Indonesia and New Caledonia

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ABSTRACT

Galatheid crustaceans of the genus *Paramunida* Baba, 1988, collected in the Philippines, Indonesia and New Caledonia, have been studied. The collection contains 12 species, seven of which are described as new : *P. belone, P. evexa, P. pictura, P. polita, P. pronoe, P. stichas,* and *P. thalie*. An identification key for all of the species of the genus is provided.

RÉSUMÉ

Crustacea Decapoda : Les espèces du genre *Paramunida* (Galatheidae) récoltées aux Philippines, en Indonésie et en Nouvelle-Calédonie.

Douze espèces du genre *Paramunida* Baba, 1988, ont été récoltées au cours de campagnes dans l'Ouest-Pacifique (Philippines, Indonésie et Nouvelle-Calédonie). Sept sont décrites comme nouvelles (*P. belone, P. evexa, P. pictura, P. polita, P. pronoe, P. stichas* et *P. thalie*). Les épines des régions gastrique et cardiaque, la présence ou l'absence de stries sur les sternites thoraciques, la forme et la taille de l'épine mésiodistale du second segment antennaire, la coloration, sont les principaux caractèresde distinction entre les espèces. Une clé d'identification est proposée pour les 14 espèces reconnues dans le genre.

INTRODUCTION

The genus *Paramunida* was created by BABA (1988) to include those species described as belonging to the genus *Munida* Leach, 1820, having a very short rostrum, reduced transverse ridges on the carapace, male gonopods absent from the first abdominal segment, and a well developed anterolateral projection on the first segment of the antennal peduncle. The genus is restricted to the Indian and Pacific oceans, and BABA (1988) included 7 species : *P. granulata*

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(Henderson, 1885), *P. hawaiiensis* (Baba, 1981), *P. longior* Baba, 1988, *P. proxima* (Henderson, 1885), *P. scabra* (Henderson, 1885), *P. setigera* Baba, 1988, and *P. tricarinata* (Alcock, 1894) (see also ALCOCK, 1894, 1891; ALCOCK & ANDERSON, 1895; BABA, 1981).

The numerous representatives of this genus obtained during the expeditions to the Philippines, Indonesia and New Caledonian area revealed the existence of 12 species, 7 of them described here as new. Therefore, the genus is actually represented by 14 species. In this paper, the description and/or additional information for 13 species are provided, including an identification key for all the species of the genus. *P. tricarinata* (Alcock, 1894) collected in several localities of the Indian ocean, is also illustrated and included in the text due to its relationship with several species obtained in Indonesia, the Philippines and New Caledonian zone [e.g. *P. scabra* (Henderson, 1885), *P. thalie* sp. nov. from Loyalty Islands]. One species, *P. hawaiiensis* (Baba, 1981), only known from Hawaii, is not included in the systematic account of this paper. However, it is easily differentiated from the other species by the size of the supraocular spines and the shape of the rostrum and of the the antennular peduncle (see BABA, 1981; 1988).

The number of spines on the gastric and cardiac regions, the shape and size of the rostrum and supraocular spines, the presence/absence of striae on the thoracic sternites, the length of the basal segment of the antennular peduncle, the size and shape of the spines of the second segment of the antennal peduncle, the ratio propodus length/propodus height and propodus length/dactylus length of the walking legs and the colour pattern are the most relevant and constant aspects to differentiate the species. Some characters are rather constant in all the species considered and it seems that they have not systematic significance. Therefore, in order to avoid unnecessary repetitions they will be only included in the description of the first species considered (*P. belone*). These characters are : the armature of the abdominal tergites, the spinulation of the merus of the third maxilliped, and the armature of the chelipeds and walking legs. Finally, in this paper, the rostrum is considered from the sinus between supraocular spines until the tip of the rostral spine.

The types of the new species and other material are deposited in the collections of the Muséum national d'Histoire naturelle, Paris (MNHN), the Puslitbang Oseanologi - LIPI, Jakarta (POLIPI), and the National Museum of Natural History, Washington (NMNH). Abbreviations of other institutions are : The Natural History Museum, London (BM) and Senckenberg Museum, Frankfürt (SM). Measurements given in this paper are of the carapace length, excluding rostrum.

LIST OF STATIONS

The abbreviations of the devices used are : CC = Otter trawl; CP = Beam trawl; D = Dredge; DC = Charcot dredge; DW = Waren dredge.

MUSORSTOM 1. **Philippines.**

Station 5. — 19.03.1976, 14°01.5'N, 120°23.5'E, 200-215 m : *P. setigera.*
Station 10. — 19.03.1976, 13°59.8'N, 120°18.2'E, 187-205 m : *P. scabra.*
Station 19. — 21.03.1976, 13°57.8'N, 120°18.2'E, 167-187 m : *P. scabra.*
Station 21. — 21.03.1976, 14°01.0'N, 120°22.8'E, 174-223 m : *P. setigera.*
Station 27. — 22.03.1976, 13°59.8'N, 120°18.6'E, 188-192 m : *P. scabra.*
Station 30. — 22.03.1976, 14°01.3'N, 120°18.7'E, 177-186 m : *P. scabra.*
Station 31. — 22.03.1976, 14°00.0'N, 120°16.0'E, 187-195 m : *P. scabra.*
Station 34. — 23.03.1976, 14°01.0'N, 120°15,8'E, 188-191 m : *P. scabra.*
Station 40. — 24.03.1976, 13°57.4'N, 120°27.8'E, 265-287 m : *P. proxima.*
Station 42. — 24.03.1976, 13°55.1'N, 120°28.6'E, 379-407 m : *P. setigera.*
Station 51. — 25.03.1976, 13°49.4'N, 120°04.2'E, 170-200 m : *P. scabra, P. setigera.*
Station 54. — 26.03.1976, 13°54.2'N, 119°57.9'E, 975-1075 m : *P. scabra.*
Station 58. — 26.03.1976, 13°58.0'N, 120°13.7'E, 143-178 m : *P. scabra.*
Station 61. — 27.03.1976, 14°02.2'N, 120°18.1'E, 184-202 m : *P. scabra.*

Station 62. — 27.03.1976, 13°59.5'N, 120°15.6'E, 179-194 m : *P. scabra.*
Station 63. — 27.03.1976, 14°00.8'N, 120°15.8'E, 191-195 m : *P. scabra.*
Station 64. — 27.03.1976, 14°00.5'N, 120°16.3'E, 194-195 m : *P. scabra.*
Station 71. — 28.03.1976, 14°09.3'N, 120°26.2'E, 174-204 m : *P. scabra.*

MUSORSTOM 2. **Philippines.**

Station 1. — 20.11.1980, 14°00.3'N, 120°19.3'E, 188-198 m : *P. scabra.*
Station 2. — 20.11.1980, 14°01.0'N, 120°17.1'E, 184-186 m : *P. scabra.*
Station 4. — 20.11.1980, 14°01.2'N, 120°18.4'E, 183-190 m : *P. scabra.*
Station 10. — 21.11.1980, 14°00.1'N, 120°18.5'E, 188-195 m : *P. scabra.*
Station 31. — 24.11.1980, 13°40.5'N, 120°53.7'E, 204-230 m : *P. scabra.*
Station 35. — 24.11.1980, 13°27.9'N, 121°11.6'E, 160-198 m : *P. scabra.*
Station 51. — 27.11.1980, 13°59.3'N, 120°16.4'E, 170-187 m : *P. scabra.*
Station 54. — 27.11.1980, 13°59.5'N, 120°09.3'E, 170-174 m : *P. scabra.*
Station 55. — 27.11.1980, 13°53.7'N, 119°58.5'E, 865-866 m : *P. setigera.*
Station 59. — 28.11.1980, 14°00.5'N, 120°16.5'E, 186-190 m : *P. scabra.*
Station 63. — 29.11.1980, 14°07.3'N, 120°15.0'E, 215-230 m : *P. stichas.*
Station 71. — 30.11.1980, 14°00.1'N, 120°17.8'E, 189-197 m : *P. scabra.*
Station 72. — 30.11.1980, 14°00.7'N, 120°19.4'E, 182-197 m : *P. scabra.*
Station 80. — 01.12.1980, 13°45.1'N, 120°37.7'E, 178-205 m : *P. scabra.*
Station 83. — 02.12.1980, 13°55.2'N, 120°30.5'E, 318-320 m : *P. scabra.*

MUSORSTOM 3. **Philippines.**

Station 86. — 31.05.1985, 14°00.4'N, 120°17.8'E, 187-192 m : *P. scabra.*
Station 87. — 31.05.1985, 14°00.6'N, 120°19.6'E, 191-197 m : *P. scabra.*
Station 88. — 31.05.1985, 14°00.5'N, 120°17.4'E, 183-187 m : *P. scabra.*
Station 90. — 31.05.1985, 14°00.1'N, 120°18.6'E, 195 m : *P. scabra.*
Station 95. — 01.06.1985, 13°55.8'N, 119°59.3'E, 865 m : *P. scabra.*
Station 120. — 03.06.1985, 12°05.6'N, 121°15.6'E, 219-220 m : *P. setigera.*
Station 133. — 05.06.1985, 11°57.8'N, 121°52.2'E, 334-390 m : *P. scabra.*
Station 143. — 07.06.1985, 11°28.3'N, 124°11.6'E, 205-214 m : *P. scabra.*

BIOCAL. **New Caledonia.**

Station CP 108. — 09.09.1985, 22°02.5'S, 167°05.6'E, 335 m : *P. setigera.*

MUSORSTOM 4. **New Caledonia.**

Station CC 173. — 17.09.1985, 19°02.5'S, 163°18.8'E, 250-290 m : *P. longior.*
Station DW 223. — 30.09.1985, 22°57.0'S, 167°30.0'E, 545-560 m : *P. stichas.*
Station CP 238. — 02.10.1985, 22°13.0'S, 167°14.0'E, 500-510 m : *P. stichas, P. pronoe.*
Station CP 243. — 03.10.1985, 22°02.8'S, 167°07.7'E, 435-450 m : *P. longior.*
Station CC 246. — 03.10.1985, 22°08.5'S, 167°11.5'E, 410-420 m : *P. setigera*

CHALCAL 2. **New Caledonia.**

Station DW 73. — 29.10.1986, 29°39.9'S, 168°38.1'E, 573 m : *P. stichas.*
Station DW 74. — 29.10.1986, 24°40.3'S, 168°38.3'E, 650 m : *P. granulata.*
Station DW 75. — 29.10.1986, 24°39.3'S, 168°39.6'E, 600 m : *P. granulata, P. pictura.*

SMIB 6. **New Caledonia.**

Station DW 115. — 02.03.1990, 19°00.1'S, 163°27.5'E, 280-285 m : *P. pictura.*

CHALCAL 1. **Chesterfield Islands.**

Station CP 4. — 16.07.1984, 19°33.9'S, 158°37.9'E, 350-370 m : *P. pictura.*
Station D 33. — 19.07.1984, 19°44.8'S, 158°25.8'E, 205 m : *P. pictura.*

MUSORSTOM 5. **Chesterfield Islands.**

Station CP 253. — 07.10.1986, 25°08.7'S, 159°55.2'E, 295 m : *P. pictura.*
Station CP 267. — 08.10.1986, 25°23.6'S, 159°47.2'E, 285 m : *P. pictura.*
Station CP 268. — 09.10.1986, 24°44.7'S, 159°39.2'E, 280 m : *P. pictura.*
Station CP 275. — 09.10.1986, 24°46.6'S, 159°40.3'E, 285 m : *P. pictura.*
Station CP 276. — 09.10.1986, 24°48.9'S, 159°40.9'E, 258-269 m : *P. pictura.*
Station CP 288. — 10.10.1986, 24°04.8'S, 159°36.8'E, 270 m : *P. pictura.*
Station CP 289. — 10.10.1986, 24°01.5'S, 159°38.4'E, 273 m : *P. pictura.*
Station CP 293. — 11.10.1986, 23°09.3'S, 159°30.8'E, 280 m : *P. pictura.*
Station DW 303. — 12.10.1986, 22°11.9'S, 159°23.2'E, 332 m : *P. pictura.*
Station CP 307. — 12.10.1986, 22°11.1'S, 159°24.1'E, 350-345 m : *P. pictura.*
Station CP 309. — 12.10.1986, 22°10.2'S, 159°22.8'E, 340 m : *P. pictura.*
Station CP 311. — 12.10.1986, 22°13.6'S, 159°23.9'E, 320 m : *P. pictura.*
Station CP 312. — 12.10.1986, 22°17.2'S, 159°24.8'E, 315-320 m : *P. pictura.*
Station DW 328. — 15.10.1986, 20°22.8'S, 158°43.6'E, 355-340 m : *P. pictura.*
Station DW 329. — 15.10.1986, 20°22.9'S, 158°46.6'E, 320 m : *P. pictura.*
Station DW 330. — 15.10.1986, 20°19.8'S, 158°48.4'E, 360-365 m : *P. pictura.*
Station DC 376. — 20.10.1986, 19°51.1'S, 158°29.8'E, 280 m : *P. pictura.*
Station DC 378. — 20.10.1986, 19°53.7'S, 158°38.3'E, 355 m : *P. pictura.*

MUSORSTOM 6. **Loyalty Islands.**

Station DW 392. — 13.02.1989, 20°47.3'S, 167°04.6'E, 340 m : *P. pictura.*
Station DW 397. — 13.02.1989, 20°47.3'S, 167°05.1'E, 380 m : *P. belone.*
Station DW 407. — 15.02.1989, 20°40.7'S, 167°06.6'E, 360 m : *P. pictura.*
Station DW 412. — 15.02.1989, 20°40.6'S, 167°03.7'E, 437 m : *P. belone.*
Station DW 417. — 16.02.1989, 20°41.8'S, 167°03.6'E, 283 m : *P. thalie.*
Station CP 419. — 16.02.1989, 20°41.6'S, 167°03.7'E, 283 m : *P. thalie.*
Station DW 421. — 16.02.1989, 20°26.2'S, 166°40.1'E, 245 m : *P. thalie.*
Station DW 422. — 16.02.1989, 20°26.2'S, 166°40.3'E, 257 m : *P. thalie.*
Station DW 453. — 20.02.1989, 21°00.5'S, 167°26.9'E, 250 m : *P. belone.*
Station CP 454. — 20.02.1989, 21°00.6'S, 167°26.5'E, 260 m : *P. thalie.*
Station DW 457. — 20.02.1989, 21°00.4'S, 167°28.7'E, 353 m : *P. pictura.*
Station CP 464. — 21.02.1989, 21°02.3'S, 167°31.6'E, 430 m : *P. belone.*
Station DW 468. — 21.02.1989, 21°05.8'S, 167°32.9'E, 600 m : *P. granulata.*
Station DW 483. — 23.02.1989, 21°19.8'S, 167°47.8'E, 600 m : *P. granulata.*
Station DW 486. — 23.02.1989, 20°21.4'S, 167°47.6'E, 370 m : *P. pictura.*

VOLSMAR. **Matthew and Hunter Islands.**

Station DW 17. — 03.06.1989, 22°23.2'S, 171°41.7'E, 260-300 m : *P. pictura.*

CORINDON. **Indonesia.**

Station 267. — 07.11.1980, 01°56.6'S, 119°16.7'E, 134-186 m : *P. setigera.*
Station 271. — 07.11.1980, 01°57.8'S, 119°15.0'E, 215 m : *P. setigera.*
Station 273. — 07.11.1980, 01°56.0'S, 119°16.0'E, 180-220 m : *P. setigera.*

KARUBAR. **Indonesia.**

Station CP 5. — 22.10.1991, 05°46'39"S, 132°20'04"E, 285-323 m : *P. proxima, P. scabra.*
Station CP 6. — 22.10.1991, 05°47'11"S, 132°20'40"E, 286-306 m : *P. scabra, P. proxima, P. polita.*
Station CP 15. — 24.10.1991, 05°17'38"S, 132°40'51"E, 214-221 m : *P. scabra, P. stichas.*
Station CP 16. — 24.10.1991, 05°17'06"S, 132°51'19"E, 315-348 m : *P. polita.*
Station CP 17. — 24.10.1991, 05°17'03"S, 133°00'24"E, 439-459 m : *P. granulata.*
Station CP 25. — 26.10.1991, 05°31'30"S, 132°50'40"E, 318-352 m : *P. polita.*
Station CP 33. — 27.10.1991, 06°02'10"S, 132°38'21"E, 281-311 m : *P. scabra, P. polita.*
Station CP 35. — 27.10.1991, 06°07'22"S, 132°43'45"E, 390-502 m : *P. longior, P. polita.*
Station CP 36. — 27.10.1991, 06°05'50"S, 132°44'29"E, 210-268 m : *P. scabra, P. proxima, P. stichas.*
Station CP 47. — 29.10.1991, 08°01'04"S, 132°54'07"E, 235-246 m : *P. scabra.*
Station CP 63. — 01.11.1991, 08°59'59"S, 132°56'40"E, 213-214 m : *P. setigera.*
Station CP 65. — 01.11.1991, 09°14'01"S, 132°28'28"E, 174-176 m : *P. setigera, P. evexa, P. proxima.*
Station CP 66. — 01.11.1991, 09°02'19"S, 132°10'49"E, 211-217 m : *P. evexa, P. setigera.*
Station CP 67. — 01.11.1991, 08°58'59"S, 132°07'20"E, 233-246 m : *P. scabra, P. setigera.*
Station CP 79. — 03.11.1991, 09°13'34"S, 131°22'35"E, 239-250 m : *P. setigera.*
Station DW 80. — 04.11.1991, 09°37'00"S, 131°02'00"E, 199-201 m : *P. evexa.*
Station CP 84. — 04.11.1991, 09°22'41"S, 131°07'17"E, 246-275 m : *P. proxima.*
Station CP 85. — 04.11.1991, 09°22'51"S, 131°12'04"E, 239-244 m : *P. scabra.*
Station CP 86. — 04.11.1991, 09°23'59"S, 131°14'29"E, 222-226 m : *P. scabra, P. evexa.*

Key to species of *Paramunida*

1. Rostral spine smaller than supraocular spines **2**
— Rostral spine larger than supraocular spines **3**

2. Base of rostrum strongly excavated. Basal segment of antennula gradually narrowed distally, with 2 more or less reduced terminal spines. No bundle of setae at base of carpus of cheliped ..... ***P. hawaiiensis*** (Baba, 1981)
— Base of rostrum moderately excavated. Basal segment of antennule narrowed in distal 1/3, with 2 distinct terminal spines. Carpus of cheliped with bundle of setae at base..... ..... ***P. setigera*** Baba, 1988

3. Distomesial spine of second segment of antennal peduncle almost reaching end of anterior prolongation of first segment ..... ***P. granulata*** (Henderson, 1885)
— Distomesial spine of second segment of antennal peduncle clearly not reaching end of anterior prolongation of first segment **4**

4. Propodi of walking legs particularly slender, about 20 times as long as wide .... ***P. longior*** Baba, 1988
— Propodi of walking legs about 7 to 11 times as long as wide **5**

5. Thoracic sternites with numerous striae **6**
— Fourth thoracic sternite with few striae; fifth to seventh sternites usually without striae... ..... **11**

6. Median gastric region with a row of 3-4 strong spines **7**
— Median gastric region with 1 (rarely 2) spine of moderate size **9**

7. Second segment of antennal peduncle bluntly produced distomesially .... ***P. evexa*** sp. nov.
— Second segment of antennal peduncle with well developed distomesial spine **8**

8. Basal antennular segment exceeding corneae by distal 1/3. Propodus of walking legs slightly longer than dactylus ..... ***P. thalie*** sp. nov.
— Basal antennular segment exceeding corneae by distal 1/5 at most. Propodus of walking legs more than 1.5 times dactylus length ..... ***P. tricarinata*** (Alcock, 1894)

9. Median cardiac region with 1 spine ..... ***P. pronoe*** sp. nov.
— Median cardiac region with a row of 3-4 spines **10**

10. Mesiodistal spine of second antennal segment not evenly tapering, distally indented to form a spine-like process. Third and fourth segments of antennal peduncle reduced in size.. ..... ***P. proxima*** (Henderson, 1885)
— Mesiodistal spine of second antennal segment. evenly tapering to a sharp tip. Third and fourth segments of antennal peduncle well developed ..... ***P. scabra*** (Henderson, 1885)

11. Median gastric region with 1-2 spines of moderate size **12**
— Median gastric region with a row of 3-4 strong spines **13**

12. Mesiodistal spine of second antennal segment exceeding antennal peduncle..... ..... ***P. belone*** sp. nov.
— Mesiodistal spine of second antennal segment clearly not reaching end of antennal peduncle ..... ***P. polita*** sp. nov.

13. Mesiodistal spine of second antennal segment evenly tapering to a sharp tip, only reaching end of third segment ..... ***P. pictura*** sp. nov.
— Mesiodistal spine of second antennal segment not evenly tapering, distally indented to form a spine-like process, reaching end of antennal peduncle .... ***P. stichas*** sp. nov.

SYSTEMATIC ACCOUNT

Paramunida belone sp. nov.

Figs 1, 12

MATERIAL EXAMINED. — **Loyalty Islands.** MUSORSTOM 6 : stn 397, 380 m : 1 ♂ 5.5 mm (MNHN-Ga 2774). — Stn 412, 437 m : 1 ♂ 13.5 mm (MNHN-Ga 2825). — Stn 453, 250 m : 1 juv. 3.1 mm (MNHN-Ga 2834). — Stn 464, 430 m : 2 ♂ 15.0 mm (MNHN-Ga 2853) and 17.8 mm (MNHN-Ga 3014).

TYPES. — The male of 15.0 mm from Loyalty Islands, MUSORSTOM 6, stn 464 (MNHN-Ga 2853) has been selected as the holotype; the other specimens are paratypes.

ETYMOLOGY. — From the Greek, *belone*, needle, in reference to the long distomesial spine of the second antennal segment.

DESCRIPTION. — Carapace as long as broad. Dorsal surface covered with spinules, lacking scaly striae. Gastric and cardiac regions indistinctly circumscribed and moderately convex. Gastric region with 2 epigastric spines just behind supraocular spines; 1 median mesogastric spine. Cardiac region with a median row of 3 well developed spines, first spine stronger than others; each branchiocardiac boundary with a row of 3 spines. Posterior margin with numerous small spines.

Frontal margins moderately concave behind eyes. Anterolateral spines long, situated at anterolateral angles, exceeding the level of sinus between rostrum and supraocular spines. Branchial margins slightly convex, with 5-7 spines of about similar size.

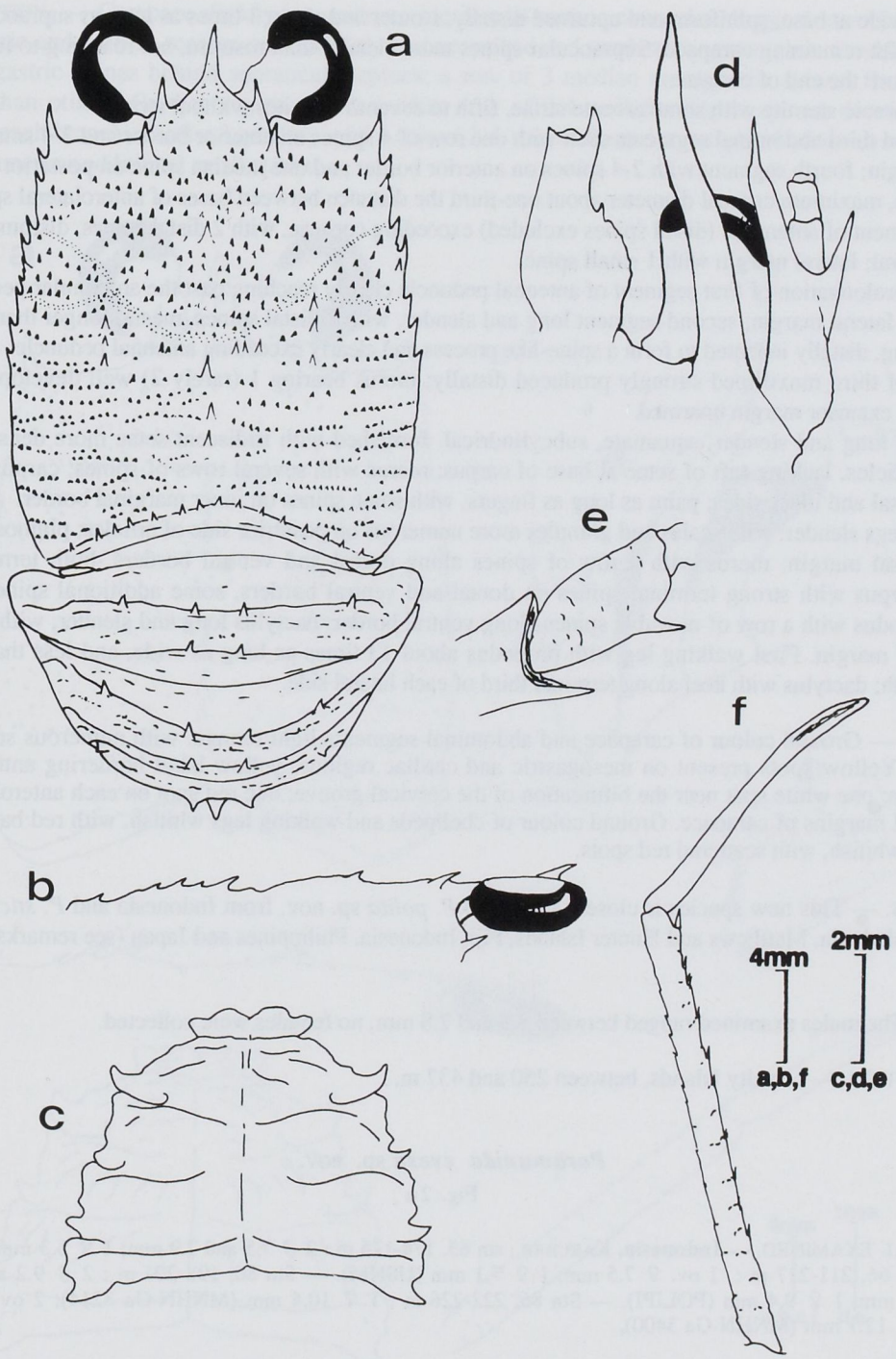

FIG. 1. — *Paramunida belone* sp. nov., ♂, 15.0 mm, holotype from stn 464 (MUSORSTOM 6) : **a**, carapace, dorsal view; **b**, upper margin of carapace and rostrum, lateral view; **c**, sternal plastron; **d**, ventral view of right cephalic region, showing antennula and antennal peduncles; **e**, merus of right third maxilliped, lateral view; **f**, propodus and dactylus of right first walking leg, lateral view.

Rostrum wide at base, spiniform and upturned distally, stouter and about 3 times as long as supraocular spines; around one-fifth remaining carapace. Supraocular spines more slender than rostrum, not reaching to its midlength and falling short the end of corneae.

Fourth thoracic sternite with some arcuate striae, fifth to seventh sternites without striae.

Second and third abdominal segments each with one row of 4 spines on anterior border and 2-4 small spines on posterior margin; fourth segment with 2-4 spines on anterior border and one median spine on posterior margin.

Eyes large, maximum corneal diameter about one-third the distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) exceeding corneae, with 2 distal spines, distomesial shorter than distolateral; lateral margin with 1 small spine.

Anterior prolongation of first segment of antennal peduncle clearly reaching past the antennular peduncle, with long setae on lateral margin; second segment long and slender, with 2 distal spines, mesial longer than lateral, not evenly tapering, distally indented to form a spine-like process and clearly exceeding antennal peduncle.

Ischium of third maxilliped strongly produced distally; merus bearing 1 (rarely 2) well developed spine on flexor border; extensor margin unarmed.

Chelipeds long and slender, squamate, subcylindrical, furnished with iridiscent setae more dense on mesial borders of articles, lacking tuft of setae at base of carpus; merus with several rows of spines; carpus with some spines on dorsal and inner sides; palm as long as fingers, with some spines on inner marginal border.

Walking legs slender, with scales and granules more numerous on posterior side of articles; plumose, iridiscent setae on dorsal margin; merus with a row of spines along dorsal and ventral borders, both terminal spines produced; carpus with strong terminal spines on dorsal and ventral borders, some additional spines on dorsal margin; propodus with a row of movable spines along ventral border; dactylus long and slender, without spinules along ventral margin. First walking leg with propodus about 13 times as long as wide, and less than 1.5 times dactylus length; dactylus with keel along terminal third of each lateral side.

COLOUR. — Ground colour of carapace and abdominal segments light orange, with numerous small red and white spots. Yellow spots present on mesogastric and cardiac regions; yellow band bordering anterior half of cardiac region; one white spot near the bifurcation of the cervical groove; one red spot on each anterolateral angle and on lateral margins of carapace. Ground colour of chelipeds and walking legs whitish, with red bands. Fingers of chelipeds whitish, with scattered red spots.

REMARKS. — This new species is closely related to *P. polita* sp. nov. from Indonesia and *P. stichas* sp. nov. from New Caledonia, Matthews and Hunter Islands, Fiji, Indonesia, Philippines and Japan (see remarks under these species).

SIZE. — The males examined ranged between 5.5 and 7.8 mm, no females were collected.

DISTRIBUTION. — Loyalty Islands, between 250 and 437 m.

Paramunida evexa sp. nov.

Fig. 2

MATERIAL EXAMINED. — **Indonesia.** KARUBAR : stn 65, 174-176 m : 2 ♂ 7.5 and 7.9 mm; 1 ♀ 5.3 mm (MNHN-Ga 3016). — Stn 66, 211-217 m : 1 ov. ♀ 7.5 mm; 1 ♀ 7.1 mm (USNM). — Stn 80, 198-201 m : 2 ♂ 9.2 and 10.0 mm; 1 ov. ♀ 11.2 mm; 1 ♀ 9.4 mm (POLIPI). — Stn 86, 222-226 m : 1 ♀ 10,4 mm (MNHN-Ga 3214); 2 ov. ♀ 11.5 and 11.7 mm, 1 ♀ 12.7 mm (MNHN-Ga 3400).

TYPES. — The female of 10.4 mm from KARUBAR, stn 86 (MNHN-Ga 3214) has been selected as the holotype; the other specimens are paratypes.

ETYMOLOGY. — From the Latin, *evexus*, rounded at the top, in reference to the second antennal segment, being bluntly produced distomesially.

DESCRIPTION. — Carapace slightly longer than wide. Dorsal surface covered with spinules, without transverse ridges. Gastric and cardiac regions not distinctly circumscribed and moderately prominent. Gastric region with 2 small epigastric spines behind supraocular spines; a row of 3 median mesogastric spines, first spine more prominent than others. Cardiac region with a median row of 3-4 well developed spines, decreasing in size posteriorly; each branchiocardiac boundary with a row of 2-4 spines. Posterior margin of carapace with 1 median spine and numerous additional small spines.

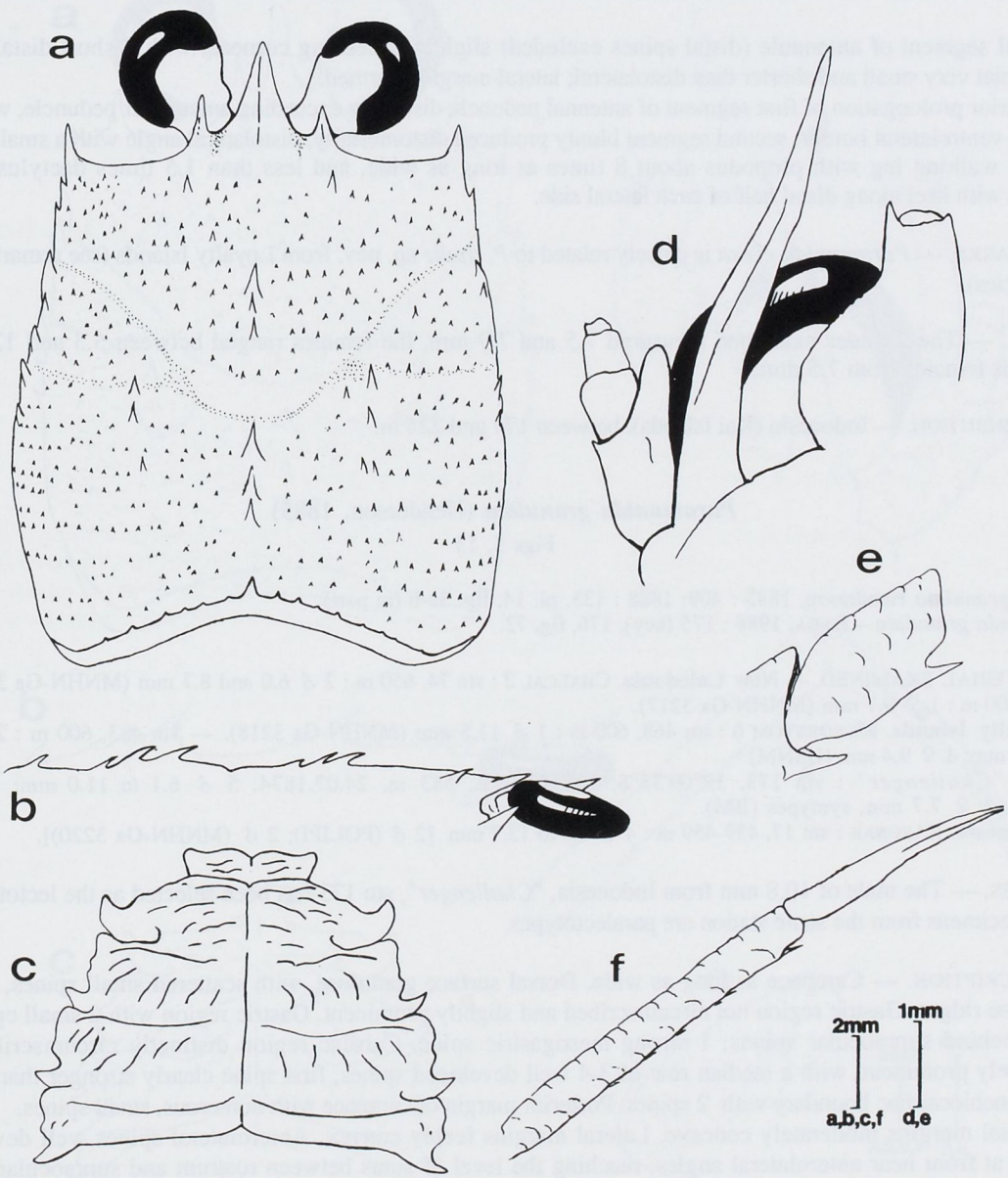

FIG. 2. — *Paramunida evexa* sp. nov., ♀, 10.4 mm, holotype from stn 86 (KARUBAR) : **a**, carapace, dorsal view; **b**, upper margin of carapace and rostrum, lateral view; **c**, sternal plastron; **d**, ventral view of right cephalic region, showing antennula and antennal peduncles; **e**, merus of right third maxilliped, lateral view; **f**, propodus and dactylus of right first walking leg, lateral view.

Frontal margins transverse, lateral margins slightly convex. Anterolateral spines well developed, situated at anterolateral angles, slightly overreaching the level of sinus between rostrum and supraocular spines. Branchial margins with 5 small spines.

Rostrum triangular, upturned distally, clearly stouter than supraocular spines and one-fifth as long as remaining carapace. Supraocular spines not reaching midlength of rostrum and end of corneae.

Thoracic sternites with numerous arcuate striae.

Eyes moderately large, maximum corneal diameter about one-fourth the distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) slightly exceeding corneae, with 2 short distal spines, distomesial very small and shorter than distolateral; lateral margin unarmed.

Anterior prolongation of first segment of antennal peduncle distinctly exceeding antennular peduncle, with long setae on ventrolateral border; second segment blunty produced distomesially, distolateral angle with a small spine.

First walking leg with propodus about 8 times as long as wide, and less than 1.5 times dactylus length; dactylus with keel along distal half of each lateral side.

REMARKS. — *Paramunida evexa* is closely related to *P. thalie* sp. nov. from Loyalty Islands (see remarks under that species).

SIZE. — The 2 males examined measured 7.5 and 7.9 mm, the females ranged between 5.3 and 12.7 mm; ovigerous females from 7.5 mm.

DISTRIBUTION. — Indonesia (Kai Islands), between 174 and 225 m.

Paramunida granulata (Henderson, 1885)

Figs 3, 13

Munida granulata Henderson, 1885 : 409; 1888 : 133, pl. 14, fig. 3a-b (in part).
Paramunida granulata – BABA, 1988 : 175 (key), 176, fig. 72.

MATERIAL EXAMINED. — **New Caledonia**. CHALCAL 2 : stn 74, 650 m : 2 ♂ 6.0 and 8.7 mm (MNHN-Ga 3216). — Stn 75, 600 m : 1 ♀ 9.7 mm (MNHN-Ga 3217).

Loyalty Islands. MUSORSTOM 6 : stn 468, 600 m : 1 ♂ 11.5 mm (MNHN-Ga 3218). — Stn 483, 600 m : 2 ♂ 10.3 and 10.6 mm; 1 ♀ 9.4 mm (USNM).

Fiji. "*Challenger*" : stn 173, 19°09'35"S, 179°41'50"E, 583 m, 24.07.1874: 5 ♂ 6.1 to 11.0 mm; 1 ov. ♀ 10.7 mm; 1 ♀ 7.7 mm, syntypes (BM).

Indonesia. KARUBAR : stn 17, 439-459 m : 4 ♂ 8.6 to 12.7 mm [2 ♂ (POLIPI); 2 ♂ (MNHN-Ga 3220)].

TYPES. — The male of 10.8 mm from Indonesia, "*Challenger*", stn 173 has been selected as the lectotype; the other specimens from the same station are paralectotypes.

DESCRIPTION. — Carapace as long as wide. Dorsal surface granulose, with scattered small spines, without transverse ridges. Gastric region not circumscribed and slightly prominent. Gastric region with 2 small epigastric spines behind supraocular spines; 1 strong mesogastric spine. Cardiac region distinctly circumscribed and moderately prominent, with a median row of 3-4 well developed spines, first spine clearly stronger than others; each branchiocardiac boundary with 2 spines. Posterior margin of carapace with numerous, small spines.

Frontal margins moderately concave. Lateral margins feebly convex. Anterolateral spines well developed, situated at front near anterolateral angles, reaching the level of sinus between rostrum and supraocular spines. Branchial margins with 4-5 small spines.

Rostrum spiniform, upturned distally, stouter than supraocular spines, one-fifth as long as remaining carapace. Supraocular spines small, clearly not reaching midlength of rostrum and falling short the end of corneae.

Thoracic sternites with numerous arcuate striae.

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

Basal segment of antennule (distal spines excluded) slightly exceeding corneae, with 2 distal spines, mesial slightly longer than lateral; lateral margin with 1-2 spines.

Anterior prolongation of first segment of antennal peduncle granulate, exceeding antennular peduncle, with long setae on ventrolateral border; second segment granulate, with 2 distal spines, mesial very long, almost reaching end of anterior prolongation of first segment, lateral spine well developed reaching end of third segment.

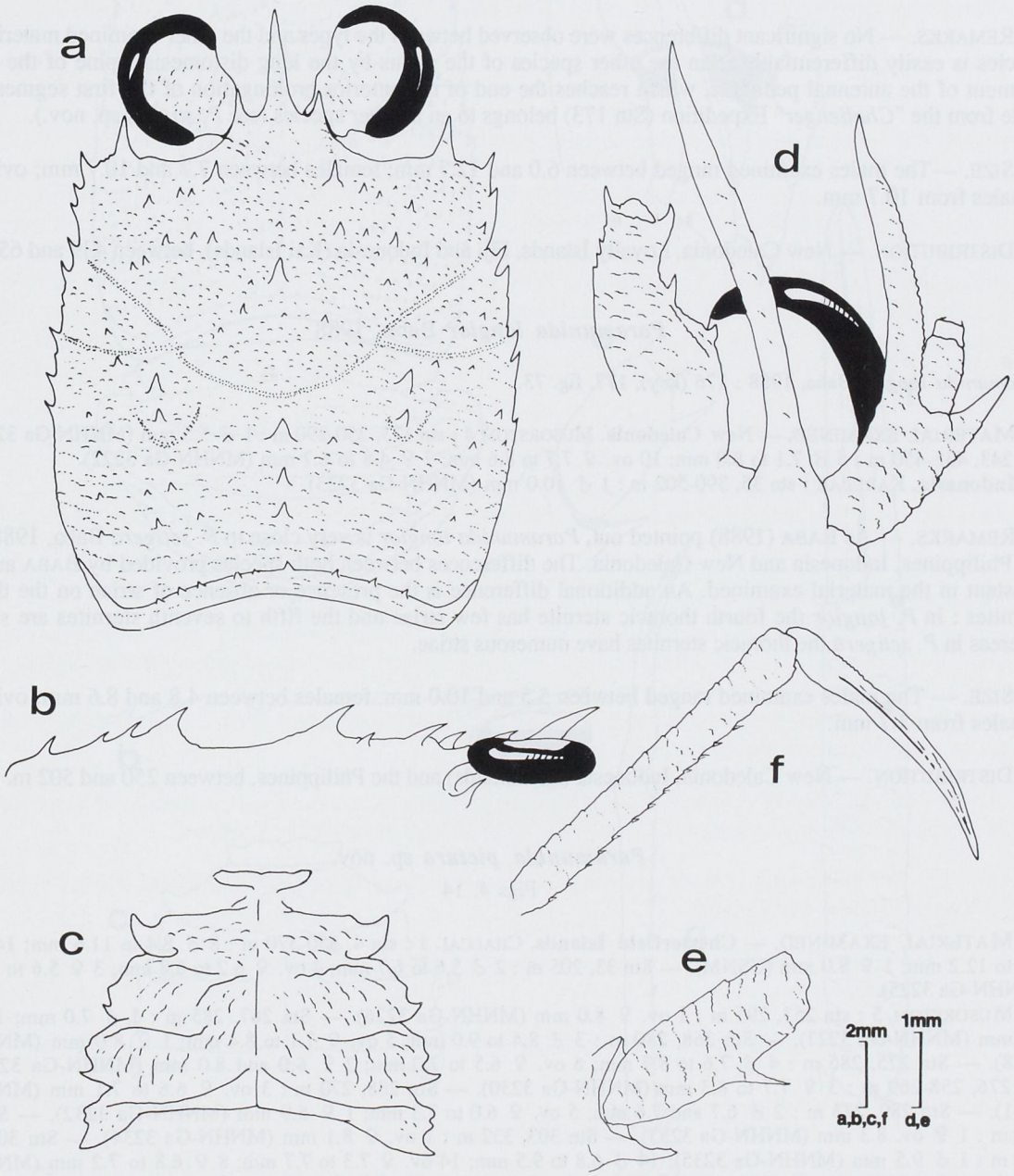

FIG. 3. — *Paramunida granulata* (Henderson, 1885), ♂ lectotype, 10.8 mm, from stn 173 (*"Challenger"*) : **a**, carapace, dorsal view; **b**, upper margin of carapace and rostrum, lateral view; **c**, sternal plastron; **d**, ventral view of right cephalic region, showing antennula and antennal peduncles; **e**, merus of right third maxilliped, lateral view; **f**, propodus and dactylus of right first walking leg, lateral view.

First walking leg with propodus about 7 times as long as wide, and less than 1.5 times dactylus length; dactylus with keel along each lateral side.

COLOUR. — Ground colour of carapace and abdominal segments pinkish, 2 red spots on posterior border of carapace. One red spot at base of each anterolateral spine of carapace. Chelipeds and walking legs pinkish, with reddish scales.

REMARKS. — No significant differences were observed between the types and the other examined material. The species is easily differentiable from the other species of the genus by the long distomesial spine of the second segment of the antennal peduncle, which reaches the end of the anterior prolongation of the first segment. One male from the "*Challenger*" Expedition (Stn 173) belongs to an another species (see *P. stichas* sp. nov.).

SIZE. —The males examined ranged between 6.0 and 12.7 mm, females between 7.7 and 10.7 mm; ovigerous females from 10.7 mm.

DISTRIBUTION. — New Caledonia, Loyalty Islands, Fiji and Indonesia (Kai Islands), between 439 and 650 m.

Paramunida longior Baba, 1988

Paramunida longior Baba, 1988 : 176 (key), 177, fig. 73.

MATERIAL EXAMINED. — **New Caledonia**. MUSORSTOM 4 : stn 173, 250-290 m : 1 ♂ 5.5 mm (MNHN-Ga 3221). — Stn 243, 435-450 m : 5 ♂ 7.1 to 8.0 mm; 10 ov. ♀ 7.7 to 8.6 mm; 7 ♀ 4.8 to 6.7 mm (MNHN-Ga 3222).
Indonesia. KARUBAR : stn 35, 390-502 m : 1 ♂ 10.0 mm (MNHN-Ga 3223).

REMARKS. — As BABA (1988) pointed out, *Paramunida longior* is very close to *P. setigera* Baba, 1988, from the Philippines, Indonesia and New Caledonia. The differences between both species provided by BABA are quite constant in the material examined. An additional difference is the presence or absence of striae on the thoracic sternites : in *P. longior* the fourth thoracic sternite has few striae and the fifth to seventh sternites are smooth; whereas in *P. setigera* the thoracic sternites have numerous striae.

SIZE. — The males examined ranged between 5.5 and 10.0 mm, females between 4.8 and 8.6 mm; ovigerous females from 7.7 mm.

DISTRIBUTION. — New Caledonia, Indonesia (Kai Islands) and the Philippines, between 250 and 502 m.

Paramunida pictura sp. nov.

Figs 4, 14

MATERIAL EXAMINED. — **Chesterfield Islands**. CHALCAL 1 : stn 4, 350-370 m : 8 ♂ 8.4 to 11.6 mm; 14 ov. ♀ 7.7 to 12.2 mm; 1 ♀ 8.0 mm (USNM). — Stn 33, 205 m : 2 ♂ 5.6 to 6.7 mm; 4 ov. ♀ 6.2 to 6.8 mm; 3 ♀ 5.6 to 6.3 mm (MNHN-Ga 3225).
MUSORSTOM 5 : stn 253, 295 m : 1 ov. ♀ 8.0 mm (MNHN-Ga 3226). — Stn 267, 285 m : 1 ♂ 7.0 mm; 1 ov. ♀ 7.7 mm (MNHN-Ga 3227). — Stn 268, 280 m : 3 ♂ 8.4 to 9.0 mm; 5 ov. ♀ 7.1 to 8.4 mm; 1 ♀ 8.0 mm (MNHN-Ga 3228). — Stn 275, 285 m : 4 ♂ 7.6 to 8.7 mm; 6 ov. ♀ 6.5 to 7.0 mm; 2 ♀ 6.0 and 8.0 mm (MNHN-Ga 3229). — Stn 276, 258-269 m : 3 ♀ 7.7 to 8.3 mm (MNHN-Ga 3230). — Stn 288, 270 m : 3 ov. ♀ 6.6 to 7.1 mm (MNHN-Ga 3231). — Stn 289, 273 m : 2 ♂ 6.7 and 7.6 mm; 5 ov. ♀ 6.0 to 7.3 mm; 1 ♀ 6.9 mm (MNHN-Ga 3232). — Stn 293, 280 m : 1 ♀ ov. 8.3 mm (MNHN-Ga 3233). — Stn 303, 332 m : 1 ov. ♀ 8.1 mm (MNHN-Ga 3234). — Stn 307, 345-350 m : 1 ♂ 9.5 mm (MNHN-Ga 3235); 14 ♂ 6.8 to 9.5 mm; 14 ov. ♀ 7.3 to 7.7 mm; 8 ♀ 6.8 to 7.2 mm (MNHN-Ga 3236). — Stn 309, 340 m : 8 ♂ 3.8 to 9.4 mm; 7 ov. ♀ 6.5 to 7.7 mm; 6 ♀ 3.7 to 8.4 mm (MNHN-Ga 3237). — Stn 311, 320 m : 1 ♂ 7.2 mm (MNHN-Ga 3238). — Stn 312, 315-320 m : 7 ♂ 7.1 to 8.5 mm; 7 ov. ♀ 7.0 to 8.8 mm; 1 ♀ 7.0 mm (MNHN-Ga 3239). — Stn 328, 355-340 m : 1 ♂ 5.5 mm (MNHN-Ga 3240). — Stn 329, 320 m : 1 ♀ 5.5 mm (MNHN-Ga 3241). — Stn 330, 360-365 m : 1 ov. ♀ 8.1 mm (MNHN-Ga 3242). — Stn 332, 400 m : 1 ♂

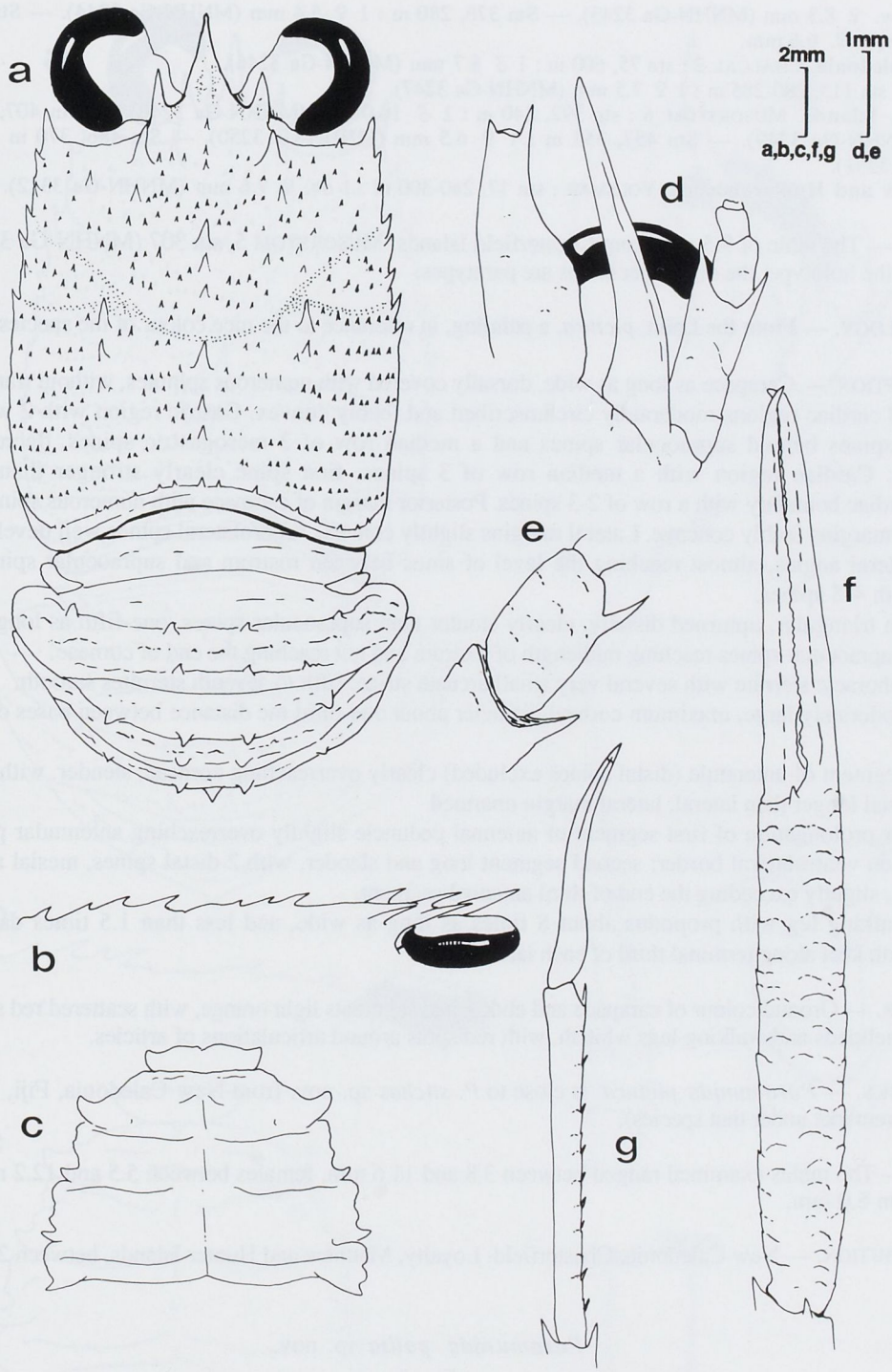

FIG. 4. — *Paramunida pictura* sp. nov., ♂, 9.5 mm, holotype from stn 307 (MUSORSTOM 5) : **a**, carapace, dorsal view; **b**, upper margin of carapace and rostrum, lateral view; **c**, sternal plastron; **d**, ventral view of right cephalic region, showing antennula and antennal peduncles; **e**, merus of right third maxilliped, lateral view; **f**, hand and fingers of right cheliped, lateral view; **g**, propodus and dactylus of right first walking leg, lateral view.

9.5 mm; 1 ov. ♀ 8.3 mm (MNHN-Ga 3243). — Stn 376, 280 m : 1 ♀ 5.4 mm (MNHN-Ga 3244). — Stn 378, 355 m : 1 ♂ 8.4 mm; 1 ♀ 6.6 mm.

New Caledonia. CHALCAL 2 : stn 75, 600 m : 1 ♂ 8.7 mm (MNHN-Ga 3246).

SMIB 6 : stn 115, 280-285 m : 1 ♀ 7.5 mm (MNHN-Ga 3247).

Loyalty Islands. MUSORSTOM 6 : stn 392, 340 m : 1 ♂ 10.0 mm (MNHN-Ga 3248). — Stn 407, 360 m : 1 ♀ 5.5 mm (MNHN-Ga 3249). — Stn 457, 353 m : 1 ♀ 6.5 mm (MNHN-Ga 3250). — Stn 486, 370 m : 1 ♀ 6.0 mm (MNHN-Ga 3251).

Matthew and Hunter Islands. VOLSMAR : stn 17, 260-300 m : 1 ov. ♀ 7.6 mm (MNHN-Ga 3312).

TYPES. — The male of 9.5 mm from Chesterfield Islands, MUSORSTOM 5, stn 307 (MNHN-Ga 3235) has been selected as the holotype; the other specimens are paratypes.

ETYMOLOGY. — From the Latin, *pictura*, a painting, in reference to the nice colour of the species.

DESCRIPTION. — Carapace as long as wide, dorsally covered with numerous spinules, without transverse ridges. Gastric and cardiac regions moderately circumscribed and feebly convex. Gastric region with 2 well developed epigastric spines behind supraocular spines and a median row of 3 mesogastric spines, decreasing in size posteriorly. Cardiac region with a median row of 3 spines, first spine clearly stronger than others; each branchiocardiac boundary with a row of 2-3 spines. Posterior margin of carapace with numerous spinules.

Frontal margins feebly concave. Lateral margins slightly convex. Anterolateral spines well developed, situated at anterolateral angles, almost reaching the level of sinus between rostrum and supraocular spines. Branchial margins with 4-5 spines.

Rostrum triangular, upturned distally, clearly stouter than supraocular spines, one-fifth as long as remaining carapace. Supraocular spines reaching midlength of rostrum and not reaching the end of corneae.

Fourth thoracic sternite with several very small arcuate striae; fifth to seventh sternites smooth.

Eyes moderately large, maximum corneal diameter about one-third the distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) clearly overreaching corneae, slender, with 2 small distal spines, mesial longer than lateral; lateral margin unarmed.

Anterior prolongation of first segment of antennal peduncle slightly overreaching antennular peduncle, with long setae on ventrolateral border; second segment long and slender, with 2 distal spines, mesial slightly longer than lateral, slightly exceeding the end of third antennal segment.

First walking leg with propodus about 8 times as long as wide, and less than 1.5 times dactylus length; dactylus with keel along terminal third of each lateral side.

COLOUR. — Ground colour of carapace and abdominal segments light orange, with scattered red spots. Rostrum whitish. Chelipeds and walking legs whitish, with red spots around articulations of articles.

REMARKS. — *Paramunida pictura* is close to *P. stichas* sp. nov. from New Caledonia, Fiji, Indonesia and Japan (see remarks under that species).

SIZE. — The males examined ranged between 3.8 and 11.6 mm, females between 5.5 and 12.2 mm; ovigerous female from 6.0 mm.

DISTRIBUTION. — New Caledonia, Chesterfield, Loyalty, Matthew and Hunter Islands, between 205 and 600 m.

Paramunida polita sp. nov.

Fig. 5

MATERIAL EXAMINED. — **Indonesia**. KARUBAR : stn 6, 286-306 m : 1 ♀ 12.0 mm (MNHN-Ga 3354); 7 ♀ 8.2 to 13.0 mm (MNHN-Ga 3399). — Stn 16, 315-349 m : 2 ♀ 10.0 and 12.8 mm (USNM). — Stn 25, 318-352 m : 1 ♂ 14.6 mm; 3 ♀ 10.0 to 11.5 mm (POLIPI). — Stn 33, 281-311 m : 1 ♀ 11.4 mm (POLIPI). — Stn 35, 390-502 m : 1 ♀ 10.4 mm (MNHN-Ga 3405).

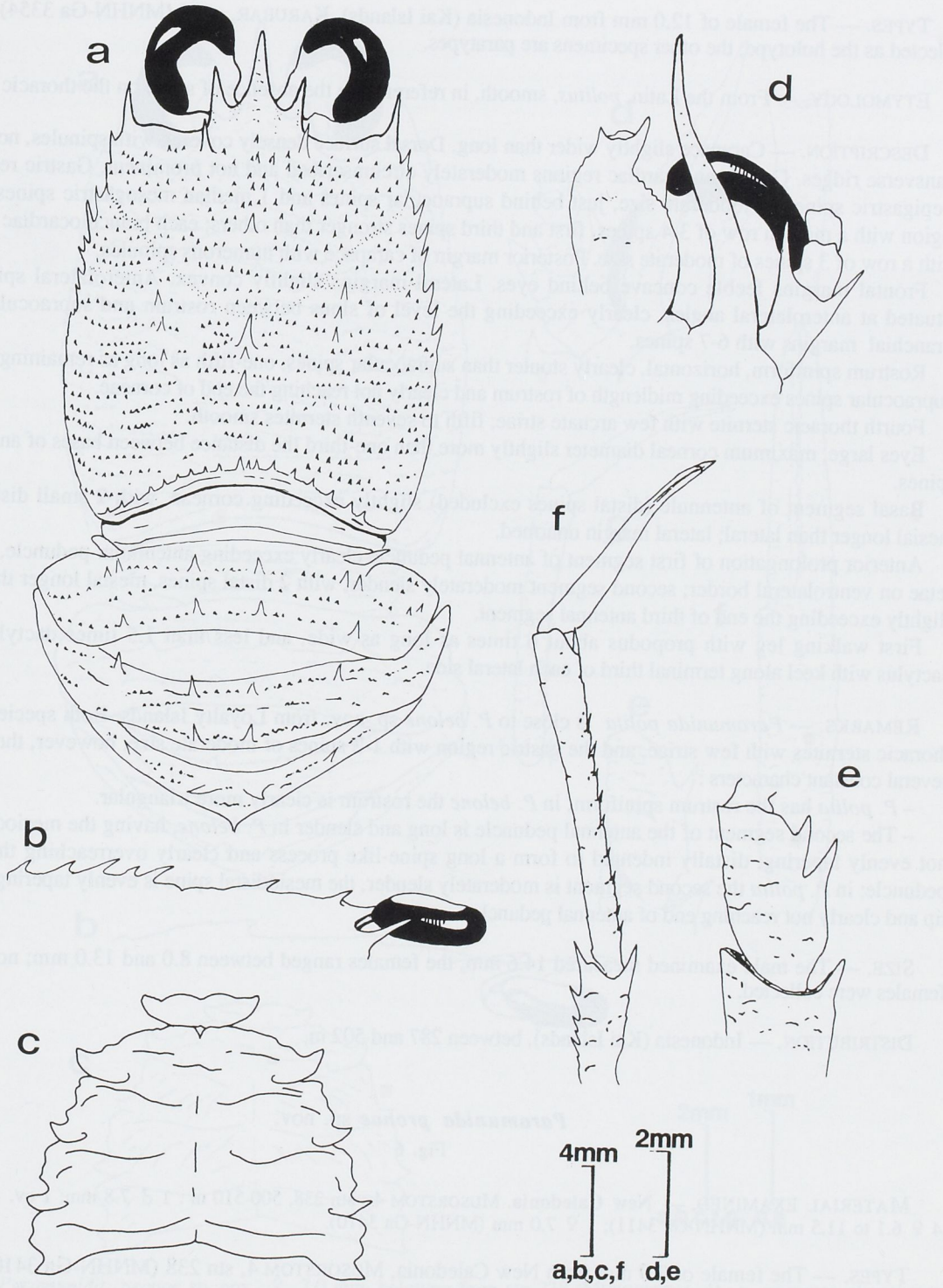

FIG. 5. — *Paramunida polita* sp. nov., ♀, 12.0 mm, holotype from stn 6 (KARUBAR) : **a**, carapace, dorsal view; **b**, upper margin of carapace and rostrum, lateral view; **c**, sternal plastron; **d**, ventral view of right cephalic region, showing antennula and antennal peduncles; **e**, merus of right third maxilliped, lateral view; **f**, propodus and dactylus of right first walking leg, lateral view.

TYPES. — The female of 12.0 mm from Indonesia (Kai Islands), KARUBAR, stn 6 (MNHN-Ga 3354) has been selected as the holotype; the other specimens are paratypes.

ETYMOLOGY. — From the Latin, *politus,* smooth, in reference to the absence of striae on the thoracic sternites.

DESCRIPTION. — Carapace slightly wider than long. Dorsal surface densely covered with spinules, not forming transverse ridges. Gastric and cardiac regions moderately circumscribed and not prominent. Gastric region with 2 epigastric spines of moderate size, just behind supraocular spines and 1 median mesogastric spines. Cardiac region with a median row of 3-4 spines, first and third spines stronger than others; each branchiocardiac boundary with a row of 3 spines of moderate size. Posterior margin of carapace with numerous spinules.

Frontal margins feeble concave behind eyes. Lateral margins slightly convex. Anterolateral spines long, situated at anterolateral angles, clearly exceeding the level of sinus between rostrum and supraocular spines. Branchial margins with 6-7 spines.

Rostrum spiniform, horizontal, clearly stouter than supraocular spines, one-fifth as long as remaining carapace. Supraocular spines exceeding midlength of rostrum and clearly not reaching the end of corneae.

Fourth thoracic sternite with few arcuate striae; fifth to seventh sternites smooth.

Eyes large, maximum corneal diameter slightly more than one-third the distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) slightly exceeding corneae, with 2 small distal spines, mesial longer than lateral; lateral margin unarmed.

Anterior prolongation of first segment of antennal peduncle clearly exceeding antennular peduncle, with long setae on ventrolateral border; second segment moderately slender, with 2 distal spines, mesial longer than lateral, slightly exceeding the end of third antennal segment.

First walking leg with propodus about 6 times as long as wide, and less than 1.5 times dactylus length; dactylus with keel along terminal third of each lateral side.

REMARKS. — *Paramunida polita* is close to *P. belone* sp. nov. from Loyalty Islands. Both species have the thoracic sternites with few striae, and the gastric region with 1-2 spines of moderate size, however, they differ in several constant characters :

– *P. polita* has the rostrum spiniform; in *P. belone* the rostrum is clearly more triangular.

– The second segment of the antennal peduncle is long and slender in *P. belone*, having the mesiodistal spine not evenly tapering, distally indented to form a long spine-like process and clearly overreaching the antennal peduncle; in *P. polita* the second segment is moderately slender, the mesiodistal spine is evenly tapering to a sharp tip and clearly not reaching end of antennal peduncle.

SIZE. — The male examined measured 14.6 mm, the females ranged between 8.0 and 13.0 mm; no ovigerous females were collected.

DISTRIBUTION. — Indonesia (Kai Islands), between 287 and 502 m.

Paramunida pronoe sp. nov.

Fig. 6

MATERIAL EXAMINED. — **New Caledonia**. MUSORSTOM 4 : stn 238, 500-510 m : 1 ♂ 7.8 mm; 1 ov. ♀ 11.0 mm; 4 ♀ 6.1 to 11.5 mm (MNHN-Ga 3411); 1 ♀ 7.0 mm (MNHN-Ga 3410).

TYPES. — The female of 7.0 mm from New Caledonia, MUSORSTOM 4, stn 238 (MNHN-Ga 3410) has been selected as the holotype; the other specimens are paratypes.

ETYMOLOGY. — The name refers to one of the Nereids of Greek mythology (*Pronoe*).

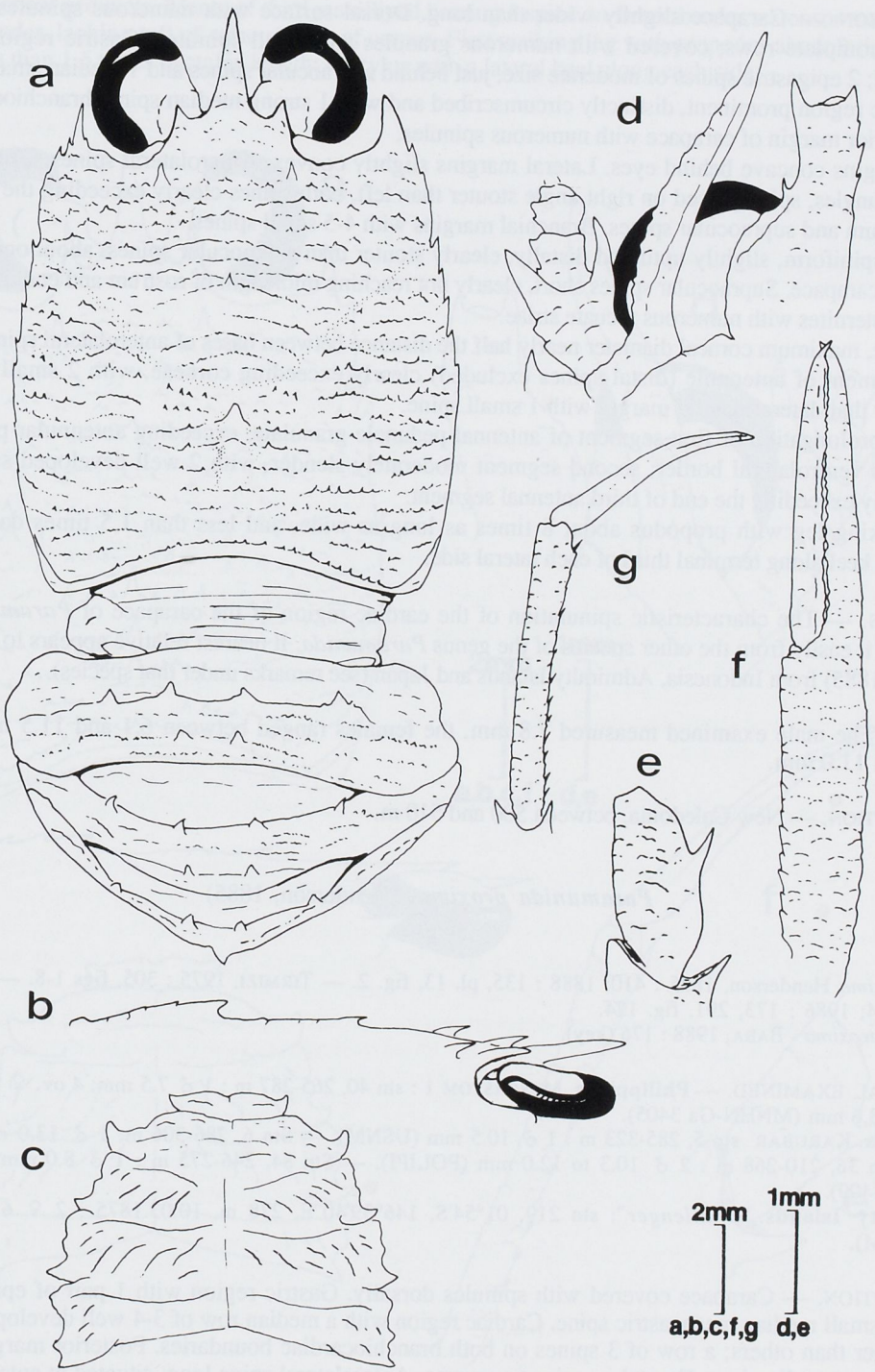

FIG. 6. — *Paramunida pronoe* sp. nov., ♀, 7.0 mm, holotype from stn 238 (MUSORSTOM 4) : **a**, carapace, dorsal view; **b**, upper margin of carapace and rostrum, lateral view; **c**, sternal plastron; **d**, ventral view of right cephalic region, showing antennula and antennal peduncles; **e**, merus of right third maxilliped, lateral view; **f**, palm and fingers of right cheliped; **g**, propodus and dactylus of right first walking leg, lateral view.

DESCRIPTION. — Carapace slightly wider than long. Dorsal surface with numerous spinules, arranged in transverse incomplete rows, covered with numerous granules and small spinules. Gastric region indistinctly circumscribed; 2 epigastric spines of moderate size, just behind supraocular spines and 1 median small mesogastric spine. Cardiac region prominent, distinctly circumscribed and with 1 strong median spine; branchiocardiac spines absent. Posterior margin of carapace with numerous spinules.

Frontal margins concave behind eyes. Lateral margins slightly convex. Anterolateral spines strong, situated at anterolateral angles, spine placed on right angle stouter than left, both spines clearly exceeding the level of sinus between rostrum and supraocular spines. Branchial margins with 4-5 small spines.

Rostrum spiniform, slightly upturned distally, clearly stouter than supraocular spines, about one-fifth as long as remaining carapace. Supraocular spines short, clearly not reaching midlength of rostrum and end of corneae.

Thoracic sternites with numerous arcuate striae.

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

Basal segment of antennule (distal spines excluded) clearly exceeding corneae, with 2 small distal spines, mesial longer than lateral; lateral margin with 1 small spine.

Anterior prolongation of first segment of antennal peduncle granulate, exceeding antennular peduncle, with long setae on ventrolateral border; second segment moderately slender, with 2 well developed subequal distal spines, slightly exceeding the end of third antennal segment.

First walking leg with propodus about 8 times as long as wide, and less than 1.5 times dactylus length; dactylus with keel along terminal third of each lateral side.

REMARKS. — The characteristic spinulation of the cardiac region of the carapace of *Paramunida pronoe* distinguishes it easily from the other species of the genus *Paramunida*. It nearest relative appears to be *P. proxima* (Henderson, 1885) from Indonesia, Admiralty Islands and Japan (see remarks under that species).

SIZE. — The male examined measured 7.8 mm, the females ranged between 6.1 and 11.5 mm; ovigerous females from 11.0 mm.

DISTRIBUTION. — New Caledonia, between 500 and 510 m.

Paramunida proxima (Henderson, 1885)

Fig. 7

Munida proxima Henderson, 1885 : 410; 1888 : 135, pl. 13, fig. 2. — TIRMIZI, 1975 : 305, figs 1-8. — BABA, 1982 : 110, fig. 4; 1986 : 173, 291, fig. 124.
Paramunida proxima - BABA, 1988 : 176 (key).

MATERIAL EXAMINED. — **Philippines**. MUSORSTOM 1 : stn 40, 265-287 m : 1 ♂ 7.5 mm; 4 ov. ♀ 9.0 to 13.3 mm; 2 ♀ 8.4 and 8.6 mm (MNHN-Ga 3405).

Indonesia. KARUBAR stn 5, 285-323 m : 1 ♂ 10.5 mm (USNM). — Stn 6, 286-306 m: 1 ♂ 13.0 mm (MNHN-Ga 3407). — Stn 36, 210-268 m : 2 ♂ 10.3 to 12.0 mm (POLIPI). — Stn 84, 246-275 m : 1 ♂ 8.0 mm; 1 ♀ 11.2 mm (MNHN-Ga 3409).

Admiralty Islands. "*Challenger*": stn 219, 01°54'S, 146°39'40"E, 278 m, 10.03.1875 : 2 ♀ 6.8 and 8.2 mm, syntypes (BM).

DESCRIPTION. — Carapace covered with spinules dorsally. Gastric region with 1 pair of epigastric spines, 1 (rarely 2) small median mesogastric spine. Cardiac region with a median row of 3-4 well developed spines, first spine stronger than others; a row of 3 spines on both branchiocardiac boundaries. Posterior margin of carapace with numerous, small spines. Frontal margins transverse. Anterolateral spine long, situated at anterolateral angle, reaching sinus between rostrum and supraocular spines. Branchial margins with 5-7 spines. Rostrum spiniform, longer than supraocular spines. Thoracic sternites with numerous striae. Eyes large. Basal segment of antennule (distal spines excluded) exceeding corneae, with 2 distal spines, distomesial spine shorter than distolateral; lateral margin unarmed or with 1 small spine. Second segment of antennal peduncle long and slender, with 2 distal spines, mesial spine longer than lateral, not evenly tapering, distally indented to form a spine-like process,

exceeding antennal peduncle. Merus of third maxilliped bearing 1 spine on flexor border; extensor margin unarmed. Chelipeds slender, lacking tuft of setae at base of carpus. First walking leg with propodus about 9 times as long as wide, and less than 1.5 times dactylus length; dactylus with a lateral keel along each side.

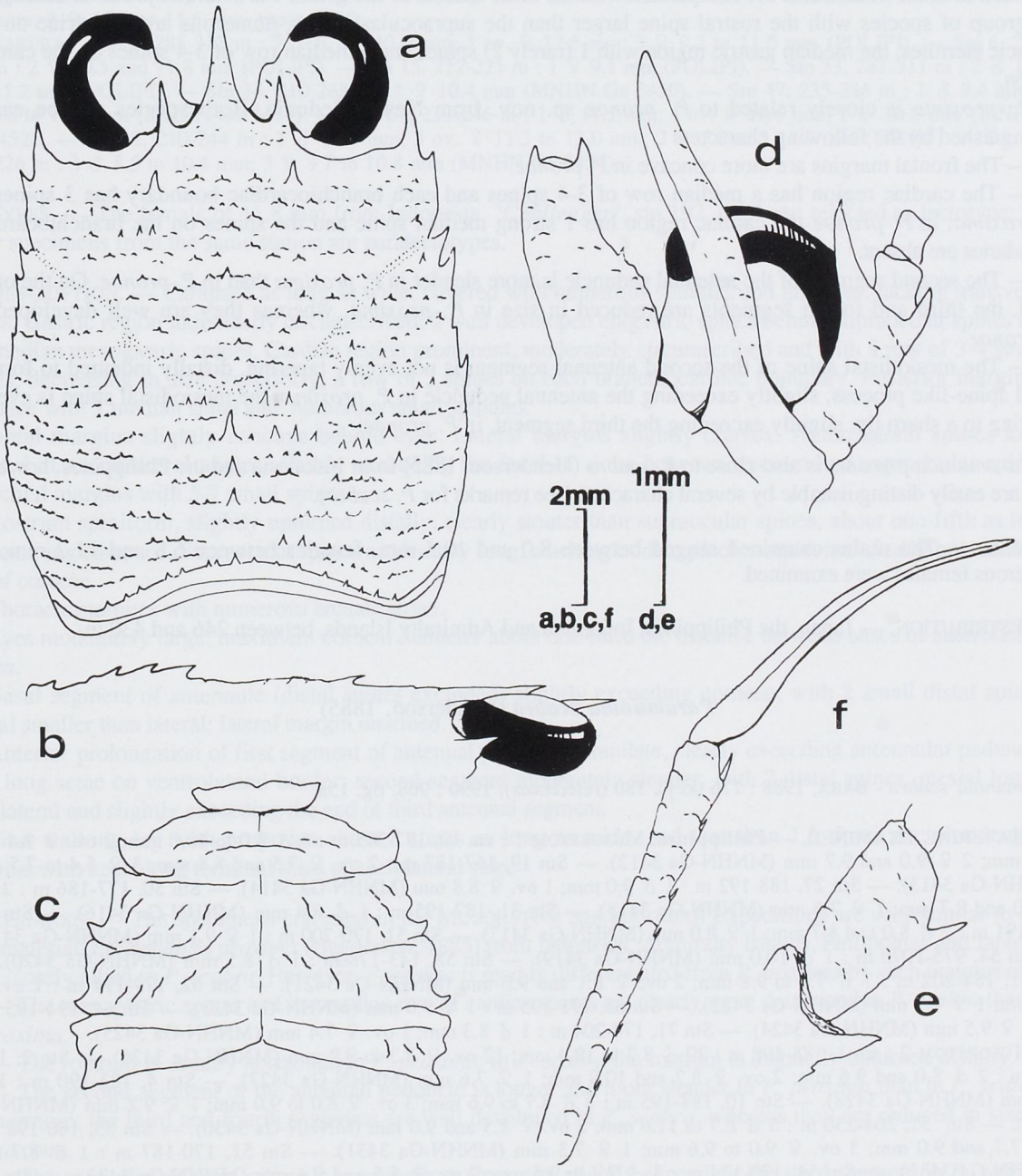

FIG. 7. — *Paramunida proxima* (Henderson, 1885), ♀, 6.8 mm, type from stn 219 (*"Challenger"*) : **a**, carapace, dorsal view; **b**, upper margin of carapace and rostrum, lateral view; **c**, sternal plastron; **d**, ventral view of right cephalic region, showing antennula and antennal peduncles; **e**, merus of right third maxilliped, lateral view; **f**, propodus and dactylus of right detached walking leg, lateral view.

REMARKS. — The specimens collected in the Philippines and Indonesia agree with the type material from the Admiralty Islands and the description and illustrations provided by TIRMIZI (1975) and BABA (1982, 1986). The former author selected a lectotype (ovigerous female of 8.6 mm) from the type series (1 ovigerous female and 2 females) and gave a complete redescription of the species. In the present paper, several additional figures are provided in order to facilitate the comparison with the other species of the genus. *Paramunida proxima* belongs to the group of species with the rostral spine larger than the supraocular spines, numerous arcuate striae on the thoracic sternites, the median gastric region with 1 (rarely 2) spines and a median row of 3-4 spines on the cardiac region.

P. proxima is closely related to *P. pronoe* sp. nov. from New Caledonia. Both species can be easily distinguished by the following characters :

— The frontal margins are more concave in *P. pronoe*.

— The cardiac region has a median row of 3-4 spines and each branchiocardiac boundary has 3 spines in *P. proxima*; in *P. pronoe* the cardiac region has 1 strong median spine and the spines on the branchiocardiac boundaries are absent.

— The second segment of the antennal peduncle is more slender in *P. proxima* than in *P. pronoe*. On the other hand, the third and fourth segments are reduced in size in *P. proxima*, whereas they are well developed in *P. pronoe*.

— The mesiodistal spine of the second antennal segment is not evenly tapering, distally indented to form a small spine-like process, slightly exceeding the antennal peduncle in *P. proxima;* the mesiodistal spine is evenly tapering to a sharp tip, slightly exceeding the third segment, in *P. pronoe*.

Paramunida proxima is also close to *P. scabra* (Henderson, 1885) from Indonesia and the Philippines, however both are easily distinguishable by several characters (see remarks for *P. scabra*).

SIZE. — The males examined ranged between 8.0 and 10.5 mm, females between 6.8 and 11.2 mm; no ovigerous females were examined.

DISTRIBUTION. — Japan, the Philippines, Indonesia and Admiralty Islands, between 246 and 430 m.

Paramunida scabra (Henderson, 1885)

Fig. 8

Paramunida scabra - BABA, 1988 : 176 (key), 180 (references); 1990 : 968, fig. 15a.

MATERIAL EXAMINED. — **Philippines**. MUSORSTOM 1 : stn 10, 187-205 m : 8 ♂ 8.0 to 10.0 mm; 2 ov. ♀ 9.4 and 10.5 mm; 2 ♀ 9.0 and 9.7 mm (MNHN-Ga 3412). — Stn 19, 167-187 m : 2 ov. ♀ 7.5 and 8.8 mm; 3 ♀ 5.4 to 7.5 mm (MNHN-Ga 3413). — Stn 27, 188-192 m : 1 ♂ 9.0 mm; 1 ov. ♀ 8.8 mm (MNHN-Ga 3414). — Stn 30, 177-186 m : 2 ov. ♀ 8.0 and 8.7 mm; 1 ♀ 7.6 mm (MNHN-Ga 3415). — Stn 31, 187-195 m : 1 ♂ 8.4 mm (MNHN-Ga 3416). — Stn 34, 188-191 m : 2 ♂ 8.0 and 8.7 mm; 1 ♀ 8.0 mm (MNHN-Ga 3417). — Stn 51, 170-200 m : 1 ♀ 9.1 mm (MNHN-Ga 3418). — Stn 54, 975-1075 m : 1 ♂ 10.0 mm (MNHN-Ga 3419). — Stn 58, 143-178 m : 1 ♂ 8.5 mm (MNHN-Ga 3420). — Stn 61, 184-202 m : 7 ♂ 7.6 to 9.8 mm; 2 ov. ♀ 8.1 and 9.0 mm (MNHN-Ga 3421). — Stn 62, 179-194 m : 1 ov. ♀ 7.2 mm; 1 ♀ 7.2 mm (MNHN-Ga 3422). — Stn 63, 191-195 m : 1 ♀ 9.0 mm (MNHN-Ga 3423). — Stn 64, 194-195 m : 1 ov. ♀ 9.5 mm (MNHN-Ga 3424). — Stn 71, 174-204 m : 1 ♂ 8.3 mm; 1 ov. ♀ 7.4 mm (MNHN-Ga 3425).

MUSORSTOM 2 : stn 1, 188-198 m : 20 ♂ 8.7 to 10.4 mm; 12 ov. ♀ 7.3 to 9.2 mm (MNHN-Ga 3426). — Stn 2, 184-186 m : 2 ♂ 8.0 and 9.6 mm; 2 ov. ♀ 8.2 and 10.0 mm; 1 ♀ 7.6 mm (MNHN-Ga 3427). — Stn 4, 183-190 m : 1 ♂ 8.0 mm (MNHN-Ga 3428). — Stn 10, 188-195 m : 3 ♂ 8.7 to 9.6 mm; 3 ov. ♀ 8.0 to 9.0 mm; 1 ♀ 9.2 mm (MNHN-Ga 3429). — Stn 31, 204-230 m : 5 ♂ 8.7 to 11.6 mm; 2 ov. ♀ 8.5 and 9.0 mm (MNHN-Ga 3430). — Stn 35, 160-198 m : 2 ♂ 7.7 and 9.0 mm; 3 ov. ♀ 9.0 to 9.6 mm; 1 ♀ 7.3 mm (MNHN-Ga 3431). — Stn 51, 170-187 m : 1 ♂ 8.7 mm (MNHN-Ga 3432). — Stn 54, 170-174 m : 3 ♂ 7.4 to 9.5 mm; 2 ov. ♀ 8.5 and 9.6 mm (MNHN-Ga 3433). — Stn 59, 186-190 m : 8 ♂ 8.2 to 10.6 mm (MNHN-Ga 3434). — Stn 71. 189-197 m : 2 ♂ 7.5 and 9.8 mm; 3 ov. ♀ 8.0 to 9.0 mm (MNHN-Ga 3435). — Stn 72, 182-197 m : 3 ♂ 9.6 to 10.0 mm; 2 ov. ♀ 8.2 and 9.5 mm (MNHN-Ga 3436). — Stn 80, 178-205 m : 7 ♂ 6.4 to 10.2 mm; 2 ov. ♀ 7.4 and 8.5 mm; 1 ♀ 6.0 mm (MNHN-Ga 3437). — Stn 83, 318-320 m : 3 ♂ 11.7 to 11.8 mm; 4 ov. ♀ 7.8 to 9.9 mm; 1 ♀ 8.6 mm (MNHN-Ga 3438).

MUSORSTOM 3 : stn 86, 187-192 m : 3 ♂ 7.7 to 9.0 mm; 1 ♀ 9.7 mm (MNHN-Ga 3439). — Stn 87, 191-197 m : 1 ♀ 7.7 mm (MNHN-Ga 3440). — Stn 88, 183-187 m : 8 ♂ 8.6 to 9.8 mm; 2 ♀ 9.5 and 9.8 mm (MNHN-Ga 3441). — Stn 90, 195 m : 13 ♂ 8.3 to 10.2 mm; 2 ♀ 9.6 and 9.8 mm (MNHN-Ga 3442). — Stn 95, 865 m : 1 ♀ 8.0 mm (MNHN-Ga 3443). — Stn 133, 334-390 m : 3 ♂ 8.0 to 11.2 mm; 1 ov. ♀ 8.6 mm (MNHN-Ga 3444). — Stn 143, 205-214 m : 1 ♂ 10.0 mm; 1 ov. ♀ 12.6 mm (MNHN-Ga 3445).

Indonesia. "*Challenger*" : stn 192, 05°49'15"S, 132°14'15"E, 259 m, 26.09.1874: 6 ♂ 11.2 to 13.7 mm; 1 ov. ♀ 13.8 mm; 8 ♀ 10.3 to 11.6 mm, types (BM).

KARUBAR : stn 5, 285-323 m : 7 ♂ 6.7 to 12.0 mm; 1 ov. ♀ 12.8 mm; 3 ♀ 9.2 to 11.0 mm (POLIPI). — Stn 6, 286-306 m : 2 ♀ 10.5 and 11.8 mm (POLIPI). — Stn 15, 212-221 m : 1 ♀ 9.1 mm (POLIPI). — Stn 33, 281-311 m : 2 ♂ 10.5 and 11.2 mm (POLIPI). — Stn 36, 210-268 m : 1 ♀ 10.4 mm (MNHN-Ga 3450). — Stn 47, 235-246 m : 1 ♂ 9.4 mm; 3 ♀ 10.0 to 11.4 mm (MNHN-Ga 3451). — Stn 67, 233-246 m : 1 ♂ 11.1 mm; 1 ov. ♀ 10.6 mm; 1 ♀ 10.8 mm (MNHN-Ga 3452). — Stn 85, 240-244 m : 1 ♂ 10.3 mm; 3 ov. ♀ 11.3 to 13.0 mm; 2 ♀ 7.0 and 11.0 mm (USNM). — Stn 86, 222-226 m : 3 ♂ 8.5 to 10.4 mm; 3 ♀ 9.7 to 10.8 mm (MNHN-Ga 3454).

TYPES. — The female of 11.8 mm from Indonesia, "*Challenger*", stn 192, has been selected as lectotype; the other specimens from the same station are paralectotypes.

DESCRIPTION. — Carapace as long as wide, covered with numerous spinules and granules, lacking transverse ridges. Gastric region indistinctly circumscribed; 2 well developed epigastric spines behind supraocular spines and 1-2 median mesogastric spines. Cardiac region prominent, moderately circumscribed and with a row of 3-4 strong spines, decreasing in size posteriorly; a row of 3 spines on each branchiocardiac boundary. Posterior margin of carapace with 1 median spine and numerous small spinules.

Frontal margins slightly concave behind eyes. Lateral margins slightly convex. Anterolateral spines long, situated at anterolateral angles, clearly exceeding the level of sinus between rostrum and supraocular spines. Branchial margins with 5-7 small spines.

Rostrum spiniform, slightly upturned distally, clearly stouter than supraocular spines, about one-fifth as long as remaining carapace. Supraocular spines moderately long, reaching midlength of rostrum and clearly not reaching end of corneae.

Thoracic sternites with numerous arcuate striae.

Eyes moderately large, maximum corneal diameter about one-third the distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) slightly exceeding corneae, with 2 small distal spines, mesial smaller than lateral; lateral margin unarmed.

Anterior prolongation of first segment of antennal peduncle granulate, clearly exceeding antennular peduncle, with long setae on ventrolateral border; second segment moderately slender, with 2 distal spines, mesial longer than lateral and slightly exceeding the end of third antennal segment.

First walking leg with propodus about 8 times as long as wide, and less than 1.5 times dactylus length; dactylus with keel along terminal third of each lateral side.

REMARKS. — The specimens collected in the MUSORSTOM and KARUBAR Expeditions are very similar to the type material. *Paramunida proxima* (Henderson, 1885) from Indonesia, Admiralty Islands, Philippines and Japan is most closely allied to *P. scabra*. However, *P. scabra* is readily differentiated from *P. proxima* by such features as :

— The mesogastric spines and the median row of cardiac spines are clearly more developed in *P. scabra* than in *P. proxima*.

— The rostrum is usually horizontal in *P. proxima*; in *P. scabra* the rostrum is distinctly upturned distally.

— The second segment of the antennal peduncle is longer and more slender in *P. proxima* than in *P. scabra*. Furthermore, the third and fourth segments are well developed in *P. scabra*, whereas they are reduced in size in *P. proxima*.

— The mesiodistal spine is evenly tapering to a sharp tip, slightly exceeding the third segment in *P. scabra*. This spine is distally indented to form a small spine-like process, slightly exceeding the antennal peduncle in *P. proxima*.

P. scabra is also close to *P. tricarinata* (Alcock, 1894) from the Indian Ocean (see remarks under that species).

SIZE. — The males examined ranged between 6.4 and 13.7 mm, females between 5.4 and 13.8 mm; ovigerous females from 7.2 mm.

DISTRIBUTION. — The Philippines and Indonesia (Kai Islands), between 143 and 1075 m.

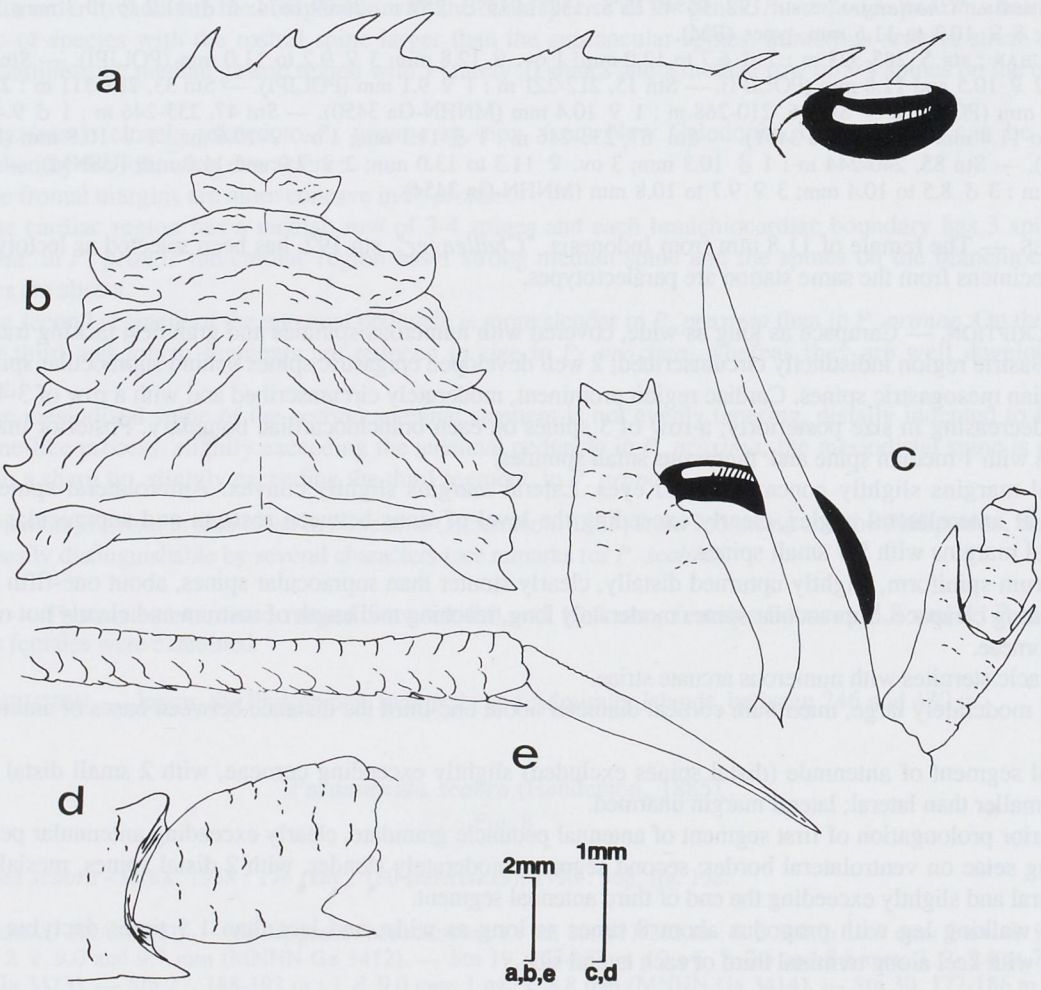

FIG. 8. — *Paramunida scabra* (Henderson, 1885), ♀ lectotype, 11.8 mm, from stn 192 (*"Challenger"*) : **a**, upper margin of carapace and rostrum, lateral view; **b**, sternal plastron; **c**, ventral view of right cephalic region, showing antennula and antennal peduncles; **d**, merus of right third maxilliped, lateral view; **e**, propodus and dactylus of right first walking leg, lateral view.

Paramunida setigera Baba, 1988

Paramunida setigera Baba, 1988 : 176 (key), 181, figs 74, 75.

MATERIAL EXAMINED. — **Philippines**. MUSORSTOM 1 : stn 5, 200-215 m : 1 ♂ 10.0 mm (MNHN-Ga 3455). — Stn 21, 174-223 m : 2 ♂ 7.5 and 8.6 mm; 1 ♀ 5.7 (MNHN-Ga 3456). — Stn 42, 379-407 m : 1 ♂ 7.3 mm (MNHN-Ga 3457). — Stn 51, 170-200 m : 5 ♂ 7.2 to 10.5 mm; 4 ♀ 4.8 to 7.0 mm (USNM).

MUSORSTOM 2 : stn 55, 866 m : 1 ♂ 4.0 mm (MNHN-Ga 3459).

MUSORSTOM 3 : stn 120, 219-220 m : 1 ♂ 7.4 mm; 4 ov. ♀ 7.9 to 9.0 mm; 3 ♀ 6.8 to 8.4 mm (MNHN-Ga 3460).

Indonesia. CORINDON : stn 267, 134-186 m : 8 ♂ 6.8 to 10.8 mm ; 4 ov. ♀ 7.8 to 9.1 mm (MNHN-Ga 3461). — Stn 271, 215 m : 1 ♂ 12.0 mm (MNHN-Ga 3462). — Stn 273, 180-220 m : 3 ♂ 9.5 to 9.7 mm; 4 ov. ♀ 7.9 to 9.0 mm; 4 ♀ 5.6 to 8.4 mm (MNHN-Ga 3463).

KARUBAR : stn 63, 213-214 m : 1 ♂ 9.7 mm; 1 ♀ 10.8 mm (MNHN-Ga 3464). — Stn 65, 174-176 m : 1 ov. ♀ 8.9 mm (MNHN-Ga 3465). — Stn 66, 211-217 m : 2 ♂ 8.1 and 9.5 mm (POLIPI). — Stn 67, 233-246 m : 1 ♂ 8.8 mm (POLIPI). — Stn 79, 239-250 m : 4 ♂ 10.2 to 11.3 mm (MNHN-Ga 3468).

New Caledonia. BIOCAL : stn 108, 335 m : 7 ov. ♀ 6.8 to 9.1 mm; 1 ♀ 5.4 mm (MNHN-Ga 3469).

MUSORSTOM 4 : stn 246, 410-420 m : 1 ov. ♀ 7.0 mm (MNHN-Ga 3470).

REMARKS. — The specimens examined agree with the original description and illustrations provided by BABA (1988). The closest species is *P. longior* Baba, 1988, from the Philippines, Indonesia and New Caledonia (see remarks under that species).

SIZE. — The males examined ranged between 4.0 and 12.0 mm, females between 4.8 and 9.1 mm; ovigerous females from 6.8 mm.

DISTRIBUTION. — The Philippines, Indonesia and New Caledonia, between 134 and 865 m.

Paramunida stichas sp. nov.

Figs 9, 15

Munida granulata Henderson, 1885 : 409; 1888 : 133 (in part).

MATERIAL EXAMINED. — **New Caledonia**. MUSORSTOM 4 : stn 223, 545-560 m : 1 ♂ 5.5 mm (MNHN-Ga 3471). — Stn 238, 500-510 m : 1 ♂ 6.9 mm; 2 ov. ♀ 6.2 and 7.0 mm; 1 ♀ 7.5 mm (MNHN-Ga 3472).

CHALCAL 2 : stn 73, 590 m : 1 ov. ♀ 8.1 mm (MNHN-Ga 3473).

Indonesia. KARUBAR : stn 15, 212-221 m : 1 ♂ 11.2 mm; 1 ♀ 9.5 mm (POLIPI). — Stn 36, 210-268 m : 1 ♂ 10.5 mm (MNHN-Ga 3476).

Philippines. MUSORSTOM 2 : stn 63, 215-230 m : 1 ♂ 10.3 mm (MNHN-Ga 3477).

Fiji. "*Challenger*" : stn 173, 19°09'35"S, 179°41'50"E, 583 m, 24.07.1874 : 1 ♂ 7.5 mm (BM).

Japan. Tosa Bay, 02.1966 (without position) : 1 ov. ♀ 9.8 mm (SM). — 3-14.11.1963, 250-300 m (without position) : 1 ♂ 8.8 mm (SM).

TYPES. — The ovigerous female of 8.1 mm from New Caledonia, CHALCAL 2, stn 73 (MNHN-Ga 3473) has been selected as the holotype; the other specimens are paratypes.

ETYMOLOGY. — From the Greek, *stichas*, row, line, in reference to the red bands of the carapace.

DESCRIPTION. — Carapace as long as wide, covered with numerous small granules and spinules, without complete transverse ridges. Gastric and cardiac regions indistinctly circumscribed; 2 epigastric spines just behind supraocular spines and a row of 3 mesogastric spines, decreasing in size posteriorly. Cardiac region slightly prominent, with a row of 3 well developed spines, first spine stronger than others; a row of 2-3 small spines on each branchiocardiac boundary. Posterior margin of carapace with one median spine and numerous additional small spinules.

Frontal margins moderately concave behind eyes. Lateral margins slightly convex. Anterolateral spines long, situated at anterolateral angles, exceeding the level of sinus between rostrum and supraocular spines. Branchial margins with 6-7 small spines.

Rostrum spiniform, horizontal, stouter than supraocular spines, about one-fifth as long as remaining carapace. Supraocular spines moderately long, not reaching midlength of rostrum and end of corneae.

Fourth thoracic sternite with a few small arcuate striae; fifth to seventh sternites smooth.

Eyes moderately large, maximum corneal diameter about one-third the distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) slightly exceeding corneae, with 2 distal spines, mesial clearly longer than lateral; lateral margin with 1 small spine.

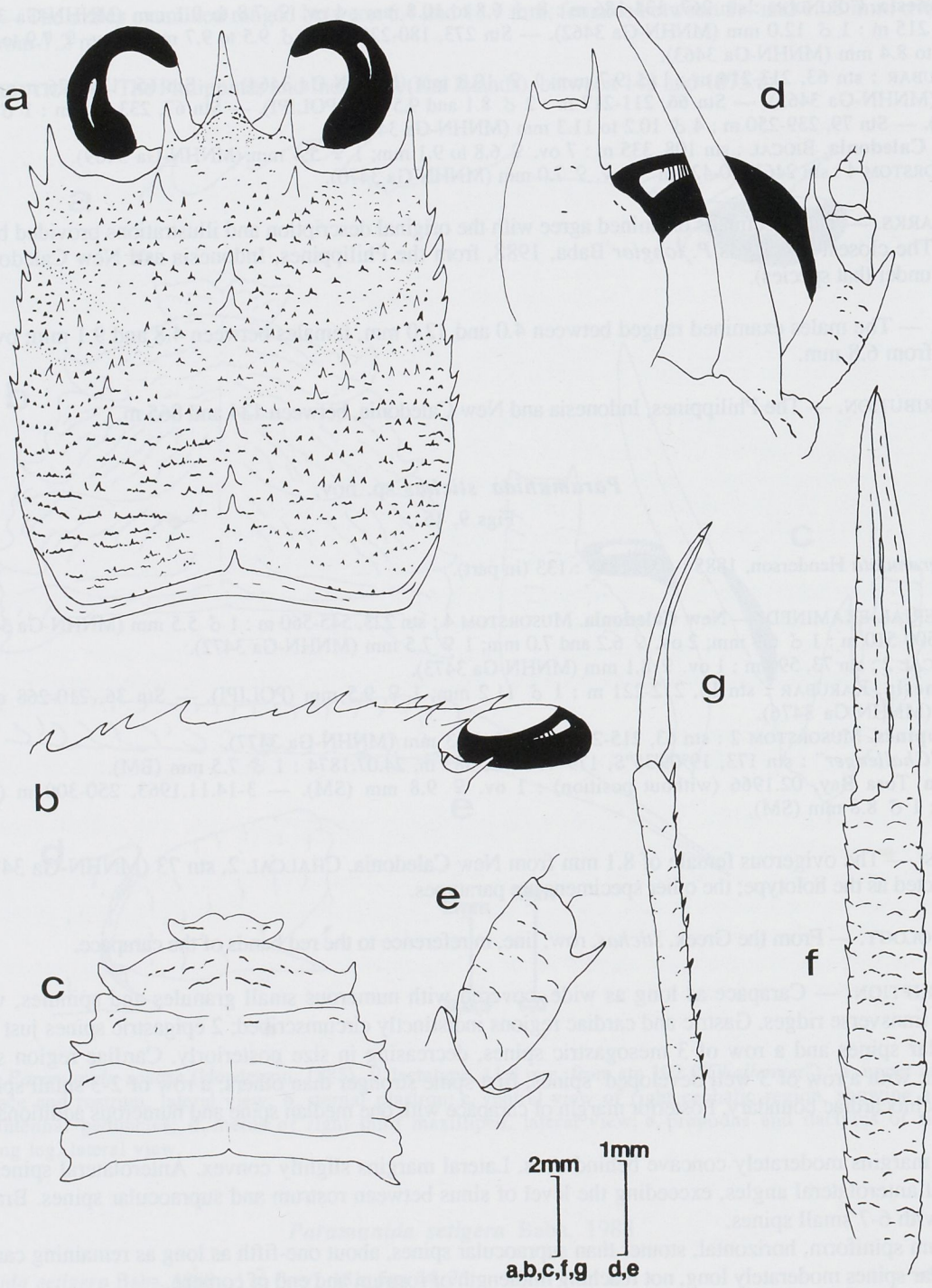

FIG. 9. — *Paramunida stichas* sp. nov., ov. ♀, 8.1 mm, holotype from stn 73 (CHALCAL 2) : **a**, carapace, dorsal view; **b**, upper margin of carapace and rostrum, lateral view; **c**, sternal plastron; **d**, ventral view of right cephalic region, showing antennula and antennal peduncles; **e**, merus of right third maxilliped, lateral view; **f**, palm and fingers of second right cheliped; **g**, propodus and dactylus of right first walking leg, lateral view.

Anterior prolongation of first segment of antennal peduncle granulate, clearly exceeding antennular peduncle, with long setae on ventrolateral border; second segment long and slender, with 2 distal spines, mesial longer than lateral and not evenly tapering, distally indented to form a well developed spine-like process reaching the end of third antennal segment.

First walking leg with propodus about 9 times as long as wide, and less than 1.5 times dactylus length; dactylus with keel along terminal half of each lateral side.

COLOUR. — Ground colour of carapace and abdominal segments whitish. Epigastric region reddish; one longitudinal, red band on each side of carapace from supraocular spine to posterior border; branchial margins reddish; median gastric and cardiac spines red. Ground colour of chelipeds and walking legs whitish, with small, scattered, red spots. Chelipeds with red bands on articulations of articles.

REMARKS. — One male collected during the "*Challenger*" Expedition (stn 173) and classified by HENDERSON (1885; 1888) as *Munida granulata*, corresponds to this new species. The specimens from Indonesia have the distomesial spine of the second antennal segment slightly longer than in the other specimens. However, this difference is considered here to be a variation until more specimens are available.

This new species is closely related to *P. pictura* sp. nov. from New Caledonia and from Chesterfield, Loyalty, Matthew and Hunter Islands, but both are distinguishable by several characters :

— The basal segment of the antennular peduncle is slender and clearly exceeds the corneae in *P. pictura;* in *P. stichas* this segment is moderately slender and slightly exceeds the corneae.

— In *P. pictura* the distomesial spine of the second antennal segment is small, evenly tapering to a sharp tip, and reaching the third antennal segment; in *P. stichas* this spine is distally indented to form a spine-like process exceeding the antennal peduncle.

— The colour pattern of both species is different (see Figs 14 and 15).

Paramunida stichas is also related to *P. belone* sp. nov. from Loyalty Islands, but they differ in the following characters :

— The rostrum of *P. belone* is wider at base than in *P. stichas.*

— In *P. belone* there is only 1 mesogastric spine, whereas in *P. stichas* there is a row of 3 well developed mesogastric spines.

— The distomesial spine of the second antennal peduncle clearly exceeds the antennal peduncle in *P. belone*; in *P. stichas* this spine only reaches the end of the antennal peduncle.

— The colour pattern of both species is different (see Figs 12 and 15).

SIZE. — The males examined ranged between 5.5 and 11.2 mm, the females between 6.2 and 9.5 mm; ovigerous females from 6.2 mm.

DISTRIBUTION. — Japan, Philippines, Indonesia (Kai Islands), Fiji, New Caledonia, and Matthew and Hunter Islands, between 210 and 590 m.

Paramunida thalie sp. nov.

Figs 10, 16

MATERIAL EXAMINED. — **Loyalty Islands**. MUSORSTOM 6 : stn 417, 283 m : 1 ♀ 10.4 mm (MNHN-Ga 3478). — Stn 419, 283 m : 1 ♀ 8.8 mm (MNHN-Ga 3224). — Stn 421, 245 m : 1 ♀ 10.0 mm (USNM). — Stn 422, 257 m : 1 ♂ 7.7 mm (MNHN-Ga 3219). — Stn 454, 260 m : 3 ov. ♀ 4.0 to 9.4 mm (MNHN-Ga 3102).

TYPES. — The female of 10.4 mm from Loyalty Islands, MUSORSTOM 6, stn 417 (MNHN-Ga 3478) has been selected as the holotype; the other specimens are paratypes.

ETYMOLOGY. — The name refers to one of the Nereids of Greek mythology (*Thalie).*

DESCRIPTION. — Carapace as long as wide. Dorsal surface covered with numerous spinules, without transverse ridges. Gastric region not distinctly circumscribed and moderately prominent; 1-3 pairs of epigastric spines, largest pair just behind supraocular spines; a row of 3-4 median mesogastric spines decreasing in size posteriorly. Cardiac region prominent, with a median row of 3 well developed spines, first spine larger than second and third; each branchiocardiac boundary with a row of 2-3 small spines. Posterior margin of carapace with 1 median spine and numerous additional small spines.

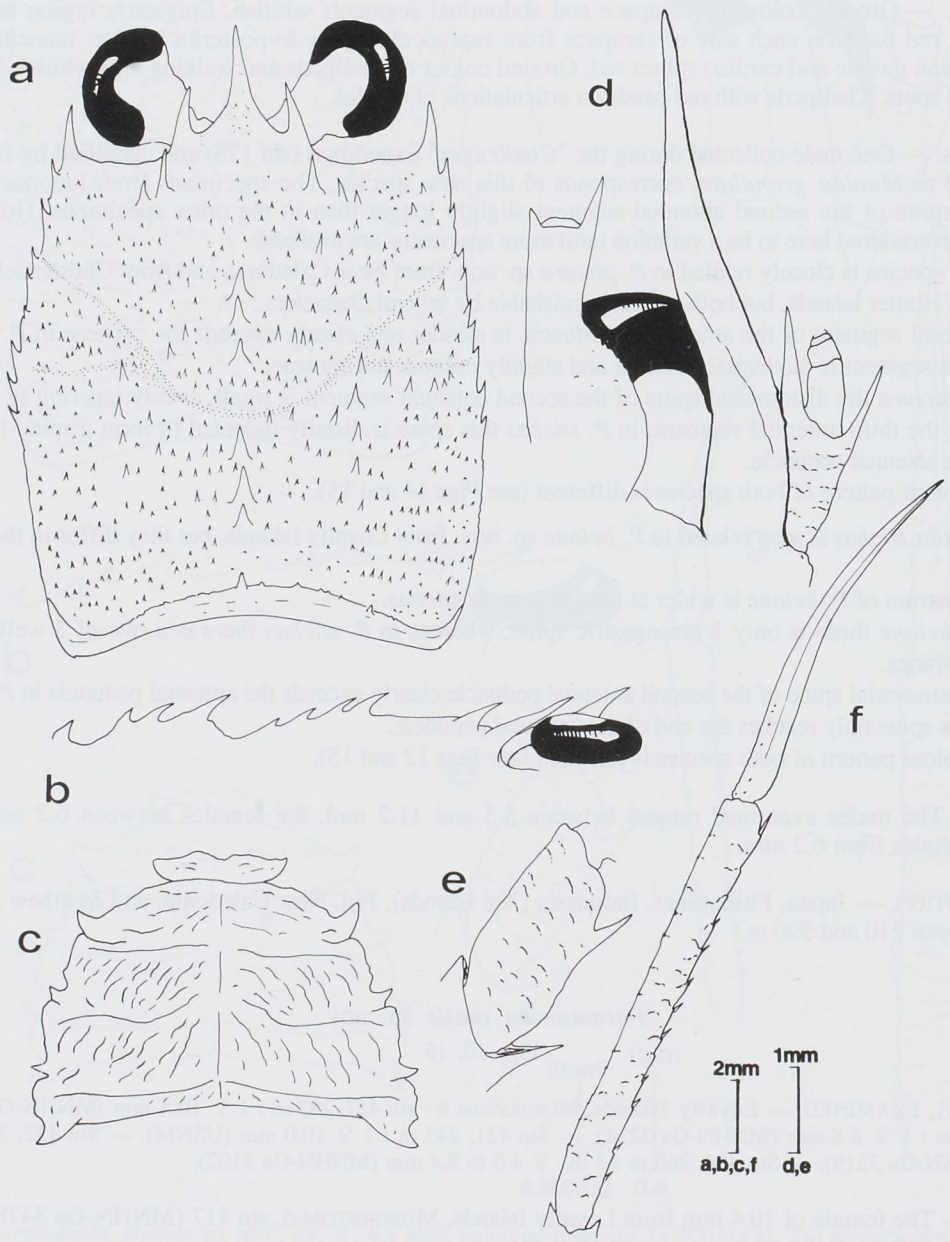

FIG. 10. — *Paramunida thalie* sp. nov., ♀, 10.4 mm, holotype from stn 417 (MUSORSTOM 6) : **a**, carapace, dorsal view; **b**, upper margin of carapace and rostrum, lateral view; **c**, sternal plastron; **d**, ventral view of right cephalic region, showing antennula and antennal peduncles; **e**, merus of right third maxilliped, lateral view; **f**, propodus and dactylus of right first walking leg, lateral view.

Frontal margins moderately concave behind eyes, lateral margins slightly convex. Anterolateral spines well developed, situated at anterolateral angles, exceeding the level of sinus between rostrum and supraocular spines. Branchial margins with 6-7 spines.

Rostrum spiniform, wide at base, upturned distally, stouter than supraocular spines and one-fifth as long as remaining carapace. Supraocular spines reaching midlength of rostrum and falling short the end of corneae.

Thoracic sternites with numerous arcuate striae.

Eyes moderately large, maximum corneal diameter about one-third the distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) long and slender, clearly exceeding corneae, with 2 distal spines, lateral longer than mesial; lateral margin unarmed

Anterior prolongation of first segment of antennal peduncle distinctly exceeding antennular peduncle, with long setae on ventrolateral border; second segment with 2 long distal spines, distomesial longer than distolateral and clearly exceeding antennal peduncle.

First walking leg with propodus about 9 times as long as wide, and less than 1.5 times dactylus length; dactylus with keel along each lateral side.

COLOUR. — Ground colour of carapace and abdominal segments orange, gastric region and anterior part of cardiac area reddish; a white spot on each bifurcation of cervical groove. A red spot on each side of first abdominal segment. Chelipeds and walking legs with red and white bands; ground colour of fingers of chelipeds whitish, proximal part red, some scattered red spots on distal part.

REMARKS. — *Paramunida thalie* resembles *P. evexa* sp. nov. from Indonesia, but they differ in the following aspects :

— The rostrum is triangular in *P. evexa*; in *P. thalie* it is clearly more spiniform.

— In *P. evexa* there is only one pair of epigastric spines, whereas in *P. thalie* there are 2-3 pairs.

— The basal segment of the antennular peduncle is more slender in *P. evexa*, clearly exceeding the corneae; in *P. thalie* this segment is shorter, slightly exceeding the corneae.

— The second antennal segment is blunty produced distomesially in *P. evexa*, whereas in *P. thalie* exists a long distomesial spine.

P. thalie is also close to *P. tricarinata* (Alcock, 1894) from the Indian Ocean (see remarks under that species).

SIZE. — The male examined measured 7.7 mm, the females between 4.0 and 10.4 mm; ovigerous females from 4.0 mm.

DISTRIBUTION. — Loyalty Islands, between 245 and 283 m.

Paramunida tricarinata (Alcock, 1894)

Fig. 11

Paramunida tricarinata – BABA, 1990 : 968, fig. 15b (references).

MATERIAL EXAMINED. — **Maldives Islands**. JOHN MURRAY EXP. : stn 149, 238 m : 1 ♂ 11.6 mm; 3 ov. ♀ 11.0 to 11.7 mm (BM).

Madagascar. 12°52.0'S, 48°10.3'E, 420-428 m : 1 ♂ 9.7 mm; 1 ov. ♀ 10.3 mm (NMNH).

DESCRIPTION. — Carapace as long as wide, dorsally covered with broken striae with numerous spinules. Gastric region not distinctly circumscribed and moderately prominent; 1 pair of epigastric spines just behind supraocular spines; a row of 3 median well developed mesogastric spines decreasing in size posteriorly. Cardiac region prominent, with a median row of 3-4 strong spines, first spine smaller than posterior spines; each branchiocardiac boundary with a row of 3-5 small spines. Posterior margin of carapace with 1 strong median spine and numerous additional small spines.

Frontal margins moderately concave behind eyes, lateral margins slightly convex. Anterolateral spines well developed, situated at anterolateral angles, clearly overreaching the level of sinus between rostrum and supraocular spines. Branchial margins with 6-7 spines.

Rostrum spiniform, wide at base, horizontal, stouter than supraocular spines and about one-fifth as long as remaining carapace. Supraocular spines exceeding midlength of rostrum and falling short the end of corneae.

Thoracic sternites with numerous arcuate striae.

Eyes moderately large, maximum corneal diameter about one-third the distance between bases of anterolateral spines.

Basal segment of antennule (distal spines excluded) slightly exceeding corneae, with 2 small distal spines, lateral longer than mesial; lateral margin unarmed.

Anterior prolongation of first segment of antennal peduncle clearly reaching past antennular peduncle, with long setae on ventrolateral border; second segment with 2 long distal spines, dismomesial longer than distolateral and clearly exceeding antennal peduncle.

First walking leg with propodus about 7 times as long as wide, and more than 1.5 times dactylus length; dactylus with keel along each lateral side.

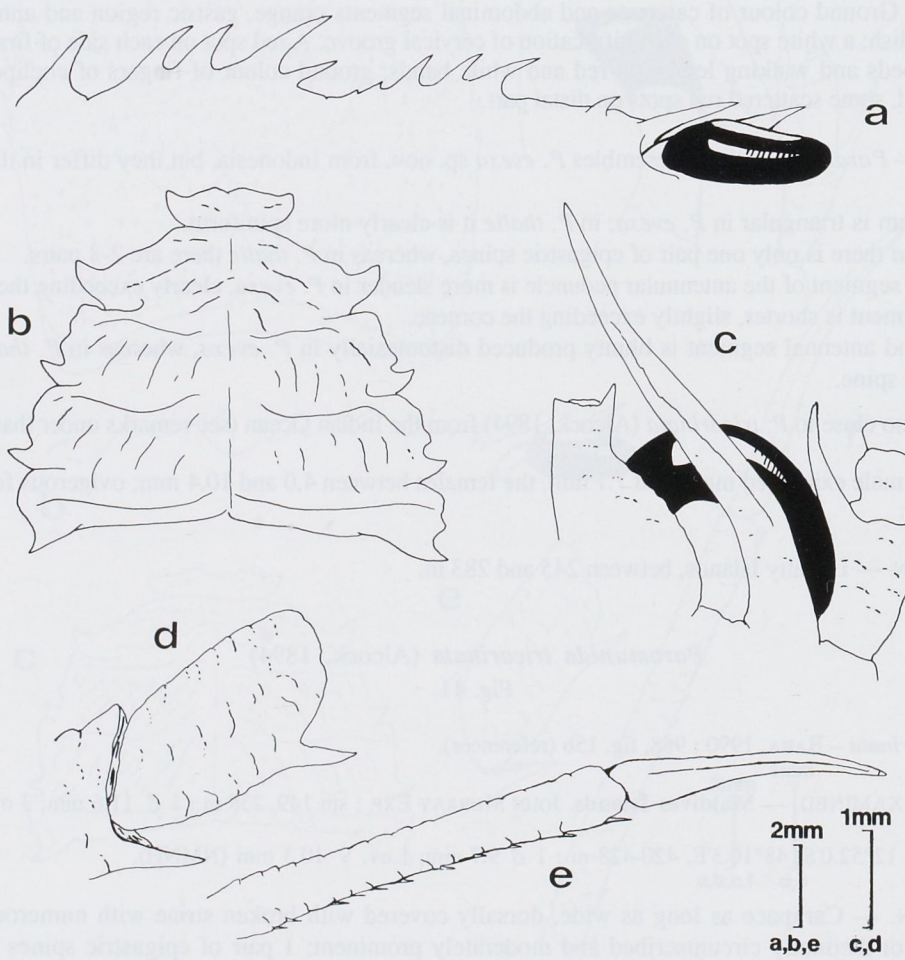

FIG. 11. — *Paramunida tricarinata* (Alcock, 1894) : **a**, ♂, 11.6 mm, **b-e**, ov. ♀, 10.0 mm, from stn 149 (JOHN MURRAY EXP.) : **a**, upper margin of carapace and rostrum, lateral view; **b**, sternal plastron; **c**, ventral view of right cephalic region, showing antennula and antennal peduncles; **d**, merus of right third maxilliped, lateral view; **e**, propodus and dactylus of right first walking leg, lateral view.

REMARKS. — *Paramunida tricarinata* was described by ALCOCK (1894) from specimens collected in the Andaman Sea, posteriorly the species was cited in the Maldives Islands, Arabian Sea, Zanzibar and Madagascar (ALCOCK, 1901; TIRMIZI, 1966; BABA, 1990). As BABA (1990) pointed out, *P. tricarinata* is close to *P. scabra* (Henderson, 1885) from the Philippines and Indonesia, but they are easily differentiated by the number and size of spines on the median row of the gastric region : 1-2 moderately-sized spines in *P. scabra* and 3-4 strong spines in *P. tricarinata*. On the other hand, the distomesial spine of the second segment of the antennal peduncle reaches the midlength of the fourth segment in *P. scabra*, whereas in *P. tricarinata* this spine always exceeds the antennal peduncle.

P. tricarinata also resembles *P. thalie* sp. nov. from Indonesia, but they differ in the following aspects :

— The mesogastric and cardiac spines are more stronger in *P. tricarinata* than in *P. thalie*.

— The basal segment of the antennular peduncle is more slender in *P. thalie*, clearly reaching past the corneae by distal one-third; in *P. tricarinata* this segment is shorter, slightly exceeding the corneae by distal one-fifth.

— The propodus of the walking legs are slightly longer than the dactylus in *P. thalie*, whereas in *P. tricarinata* the propodus is more than 1.5 times the dactylus length.

SIZE. — The males examined ranged between 8.8 and 11.6 mm, females between 9.8 and 11.7 mm; ovigerous females from 9.8 mm.

DISTRIBUTION. — Widely distributed in the Indian Ocean (Andaman Sea, Maldives Islands, Arabian Sea, Zanzibar and Madagascar), between 207 and 457 m.

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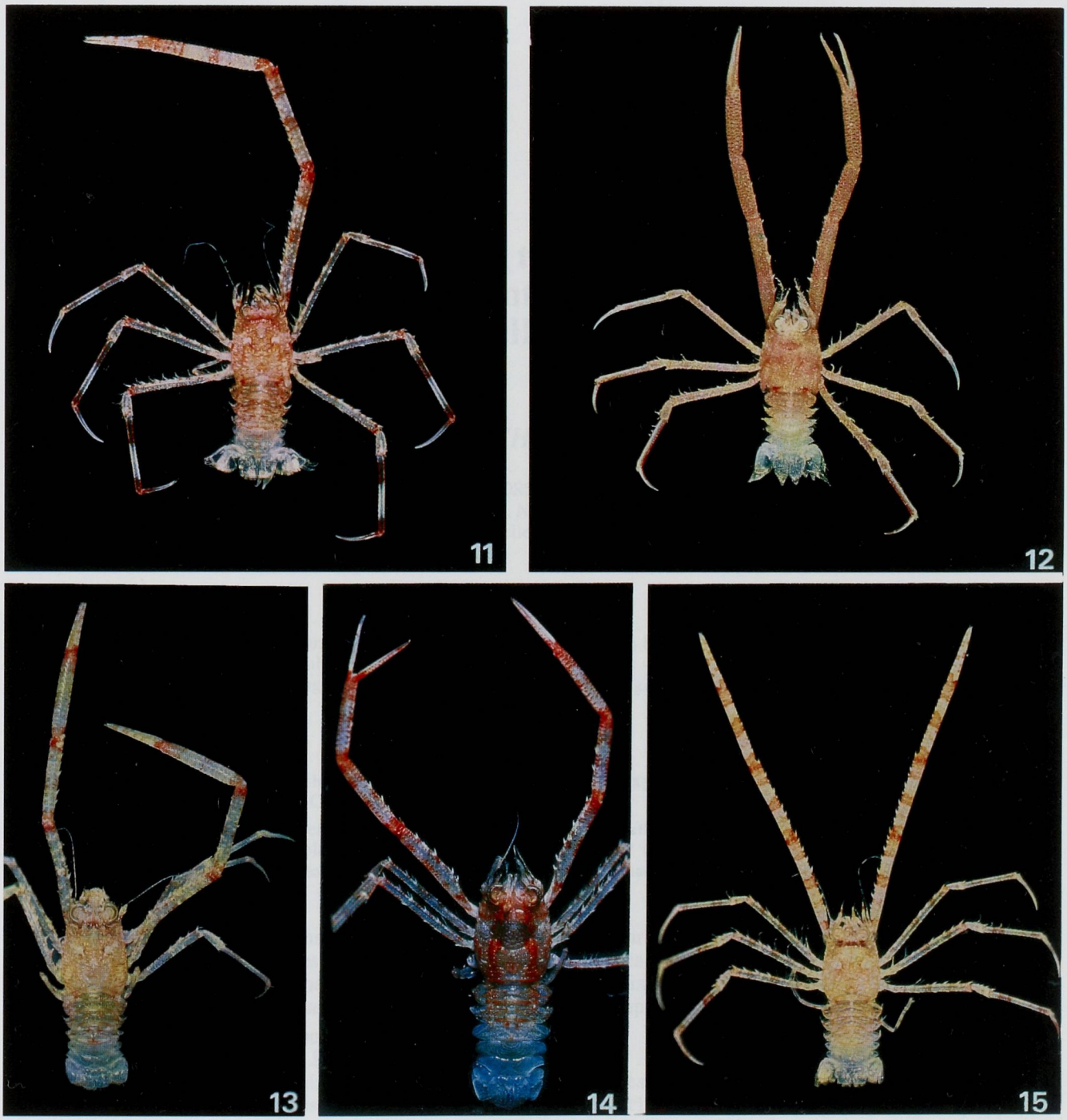

Due to an error, the numbers for the photographs of this plate should be increased by one in order to correspond to the legend. Photograph 11 becomes n°12, 12 n°13, etc...

FIG. 12, *Paramunida belone* sp. nov., ♂, 15.0 mm, holotype. MUSORSTOM 6, stn 464. — FIG. 13, *Paramunida granulata* (Henderson, 1885), ♂, 10.3 mm. MUSORSTOM 6, stn 483. — FIG. 14, *Paramunida pictura* sp. nov., ♂, 9.5 mm, holotype. MUSORSTOM 5, stn 307. — FIG. 15, *Paramunida stichas* sp. nov., ov. ♀, 8.1 mm, holotype. CHALCAL 2, stn 73. — FIG. 16, *Paramunida thalie* sp. nov., ♀, 10.4 mm, holotype (10.4 mm). MUSORSTOM 6, stn 417.