

**Porcellanidae (Decapoda, Anomura)
collected during MUSORSTOM 1 and 2**

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ABSTRACT

Twelve species of porcellanid crabs, belonging to six genera, were obtained by the MUSORSTOM 1 and 2 expeditions (1976 and 1980) to the Philippine Islands, the CORINDON 2 expedition (1980) in Makassar Strait

and during recent collecting in New Caledonia. None of these species is new, but a few of them are reported for the first time in the regions where they were captured.

RÉSUMÉ

Porcellanidae (Decapoda, Anomura) collectés durant les campagnes MUSORSTOM 1 & 2.

Douze espèces de Porcellanes, appartenant à six genres, ont été obtenues au cours des campagnes MUSORSTOM de 1976 et 1980 aux Philippines, CORIN-

DON 2 dans le détroit de Makassar, et par des récoltes récentes en Nouvelle-Calédonie. Aucune de ces espèces n'est nouvelle, mais quelques-unes sont signalées pour la première fois dans les régions où elles ont été capturées.

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INTRODUCTION

This paper deals in part with four species of Porcellanidae (Decapoda : Anomura) that were collected in 20-110 meters during the MUSORSTOM 1 and MUSORSTOM 2 expeditions to the Philippine Islands. Along with these I report on a small collection of porcellanids taken in 46-85 meters in Makassar Strait between Borneo and Sulawesi (formerly Celebes) in 1980, and a few lots of porcellanids collected in New Caledonia in 1978-1980.

The following species are treated : *Aliaporcellana pygmaea* (De Man), *Aliaporcellana suluensis*

(Dana), *Enosteoides melissa* (Miyake), *Lissoporcellana quadrilobata* (Miers), *Petrolisthes fimbriatus* Borradaile, *Petrolisthes hastatus* Stimpson, *Petrolisthes lamarckii* (Leach), *Petrolisthes militaris* (Heller), *Petrolisthes miyakei* Kropp, *Petrolisthes scabriculus* (Dana), *Polyonyx triangulatus* Zehntner, and *Porcellanella haigae* Sankarankutty.

I am indebted to J. FOREST for permitting me to study and report on this interesting collection, and to M. de SAINT LAURENT for providing some of the material from New Caledonia.

LIST OF STATIONS

Philippine Islands

MUSORSTOM 1

Station 57. — 26.03.1976, 13°53,1' N, 120°13,2' E
107-96 m : *Lissoporcellana quadrilobata*, *Petrolisthes militaris*.

MUSORSTOM 2

Station 28. — 23.11.1980, 13°41,7' N, 120°50,2' E
90-110 m : *Enosteoides melissa*, *Petrolisthes militaris*.

Station 47. — 26.11.1980, 13°33,2' N, 122°10,2' E
84-81 m : *Lissoporcellana quadrilobata*, *Petrolisthes militaris*.

Station 73. — 30.11.1980, 13°55,5' N, 120°22,3' E
20-21 m : *Aliaporcellana suluensis*, *Enosteoides melissa*.

Indonesia (Makassar)

CORINDON 2

Station 206. — 30.10.1980, 1°05,01' S, 117°45,23' E
85 m : *Petrolisthes militaris*.

Station 260. — 7.11.1980, 01°56,9' S, 119°17,6' E
50 m : *Lissoporcellana quadrilobata*.

Station 292. — 10.11.1980, 02°37,25' S, 117°53' E

46 m : *Lissoporcellana quadrilobata*.

Station 294. — 10.11.1980, 02°38,32' S, 117°50,44' E
57-46 m : *Aliaporcellana suluensis*, *Polyonyx triangulatus*.

New Caledonia

Station 203 (O.R.S.T.O.M.). — 3.10.1978, Ilot Maitre just off aquarium in baie des Citrons, 20 m : *Aliaporcellana pygmaea*.

28.09.1979, 22°29,6' S, 166°40,8' E 20-22 m, LÉVI coll. ; *Petrolisthes militaris*.

Station 265 (O.R.S.T.O.M.). — 10.1.1980, south of Ilot Tibarama, 20°55' S, 166°23'40" E 10-30 m : *Lissoporcellana quadrilobata*, *Porcellanella haigae*.

30.05.1980, Nouméa, between baie Magenta and baie de la Mission, intertidal, M. DE SAINT LAURENT coll. : *Petrolisthes hastatus*, *Petrolisthes lamarckii*.

1.06.1980, Nouméa, Pointe Bogay, intertidal, M. DE SAINT LAURENT coll. : *Petrolisthes hastatus*, *Petrolisthes scabriculus*.

2.06.1980, Nouméa, Ilot Maitre, intertidal. M. DE SAINT LAURENT coll. : *Petrolisthes fimbriatus*, *Petrolisthes hastatus*, *Petrolisthes lamarckii*, *Petrolisthes miyakei*.

SYSTEMATIC ACCOUNT

Aliaporcellana Nakasone & Miyake, 1969*Aliaporcellana pygmaea* (De Man, 1902)

Porcellana pygmaea De Man, 1902 : 698, pl. 23 figs. 38. 38 a-e.

Polyonyx pugilator Nobili, 1905 : 161.

Polyonyx pygmaeus : LEWINSOHN, 1969 : 161, fig. 36.

Aliaporcellana pygmaea : NAKASONE & MIYAKE, 1969 : 19.

MATERIAL

New Caledonia

Plongée station 203, 20 m from sponges, ♂ (not measured).

REMARKS

Both specimens were infected by a bopyrid.

DISTRIBUTION

Red Sea and Gulf of Aden, Persian Gulf, Seychelles, Madagascar, Cargados Carajos, Gulf of Siam, Java Sea, and Moluccas. Shallow water to 62 meters. The New Caledonia record considerably extends the known range of species eastward from Indonesia.

Aliaporcellana suluensis (Dana, 1852)

Pocellana suluensis Dana, 1852 : 414; DANA 1855 : pl. 26 fig. 4; MIYAKE, 1942 : 354, figs. 15, 16.

Polyonyx denticulatus Paulson, 1875 : 89, pl. 11 fig. 6.

Polyonyx hexagonalis Zehntner, 1894 : 187, pl. 8 fig. 18, 18 a.

Polyonyx suluensis HAIG, 1964 : 373, fig. 3; LEWINSOHN, 1969 : 166, fig. 37.

Aliaporcellana suluensis : NAKASONE & MIYAKE, 1969 : 21, fig. 1.

MATERIAL

MUSORSTOM 2

Station 73, 20-21 m : 1 ♀ CL 3.5 mm.

CORINDON 2, Makassar

Station 294, 57-46 m : 2 ♂ CL 4.4 and 4.5 mm.

REMARKS

The type locality of this species is the Sulu Sea. Subsequently it was reported from several Philippine localities and also from Makassar Strait (HAIG, 1964).

DISTRIBUTION

Red Sea through Indian Ocean to eastern Indonesia; south to Western Australia and Queensland and north to Japan. Littoral to 180 meters.

Enosteoides Johnson, 1970*Enosteoides melissa* (Miyake, 1942)

Porcellana melissa Miyake, 1942 : 354, 364, pl. 1 fig. 4, text-figs. 25, 26 [not fig. 27]; MIYAKE, 1943 : 131, fig. 52; NAKASONE & MIYAKE, 1968 b : 168, pl. 7 fig. B, text-fig. 2.

Enosteoides melissa : HAIG, 1978 : 709; HAIG, 1981 : 271.

MATERIAL

MUSORSTOM 2

Station 28, 90-110 m : 1 ♂ CL 4.2 mm.

Station 73, 20-21 m : 1 ♀ juv. CL 3.1 mm.

REMARKS

NAKASONE & MIYAKE (1968 b : 166) described a new species, *Porcellana palauensis*, based on the paratypes of *P. melissa*. One of the characters they used to separate the two species (both of which were transferred to the genus *Enosteoides* by HAIG, 1978) is the presence of spines on the posterior margin of the carpus of the chelipeds in *E. palauensis* and the absence of such spines in *E. melissa*. In the specimen from MUSORSTOM 2, Sta. 28 the one remaining cheliped has well developed spines on the posterior carpal margin.

Otherwise it shows all the distinguishing characters of *E. melissa*.

This species was previously reported from the Sulu Archipelago (HAIG, 1981). Its geographic range in the Philippine Islands is now extended northward approximately 8 degrees of latitude.

DISTRIBUTION

Zanzibar, Madagascar, Seychelles, Philippine Islands, and Palau Islands. Littoral to 47 meters. The known depth of the species is now increased to 110 meters.

Lissoporcellana Haig, 1978*Lissoporcellana quadrilobata* (Miers, 1884)

Porcellana streptochirus White, 1847 : 64 (nom. nud.).
Porcellana quadrilobata Miers, 1884 : 276, pl. 30 fig. D.

Porcellana gaekwari Southwell, 1909 : 112, figs. 1-3 of plate.

Aliaporcellana quadrilobata : NAKASONE & MIYAKE, 1969 : 24, fig. 2, 3.

Porcellana (Pisidia) quadrilobata : JOHNSON, 1970 : 25, fig. 3 g-i.

Lissoporcellana quadrilobata : HAIG, 1978 : 712 ; HAIG, 1981 : 279, fig. 2.

MATERIAL

MUSORSTOM 1

Station 57, 107-96 m : 5 ♂ CL 4.7 to 6.9 mm, 1 ♀ CL 6.6 mm, 3 ♀ ovig. CL 5.4 to 7.7 mm.

MUSORSTOM 2

Station 47, 84-81 m : 1 ♀ CL 3.6 mm.

CORINDON 2, Makassar

Station 260, 50 m : 5 ♂ CL 3.4 to 5.9 mm, 1 ♀ CL 4.1 mm.

Station 292, 46 m : 1 ♂ CL 3.9 mm.

New Caledonia

Plongée station 265, 10-30 m, on Pennatulacea : 5 ♂ 2.4 to 3.6 mm, 1 ♀ CL 2.7 mm, 2 ♀ ovig. CL 3.5 and 3.6 mm, 3 juv.

REMARKS

Three of the 10 Philippine specimens are infected by Rhizocephala. One parasitized male (CL 6.0 mm) from MUSORSTOM 1, Sta. 57 has both male and female pleopods.

WHITE (1847 : 64) listed, but did not describe, "*PORCELLANA streptochirus*, n. s." from Corregidor in the Philippine Islands. MIERS (1884 : 277) believed WHITE's material to belong to his own new species *Porcellana quadrilobata*, and JOHNSON (1970 : 25, 26-27) confirmed this by comparing WHITE's and MIERS's types. There is one subsequent record of *L. quadrilobata* from the Philippines (Sulu Archipelago : HAIG, 1981). The species was also reported from Makassar Strait in the latter paper.

DISTRIBUTION

Western Indian Ocean to eastern Indonesia, north to East China Sea (27°30' N) and south to Queensland. Shallow water to about 128 meters. The known range is now extended eastward to New Caledonia.

Petrolisthes* Stimpson, 1858**Petrolisthes fimbriatus* Borradaile, 1898**

Petrolisthes lamarcki var. *fimbriatus* Borradaile, 1898 : 466, pl. 36 fig. 2.
Petrolisthes fimbriatus MIYAKE, 1942 : 339, fig. 5,6.

MATERIAL

New Caledonia

Nouméa, Ilot Maitre, intertidal : 1 ♂ CL 4.1 mm.

DISTRIBUTION

Petrolisthes fimbriatus is reported from the Ryukyu, Palau, Caroline, and Marshall Islands in the northern hemisphere, and from Papua New Guinea, Ellice Islands, and Rotuma in the southern hemisphere ; now New Caledonia. It is intertidal species.

***Petrolisthes hastatus* Stimpson, 1858**

Petrolisthes hastatus Stimpson, 1858 : 241 ; STIMPSON, 1907 : 184, pl. 22 fig. 4 ; MIYAKE, 1943 : 54, 62, figs. 5, 6 ; HAIG, 1964 : 360 ; NAKASONE & MIYAKE, 1971 : 5, pl. 1 figs. A-D.
Porcellana inermis Heller, 1862 : 524.
Petrolisthes inermis : DE MAN, 1902 : 691, pl. 23 fig. 36.

MATERIAL

New Caledonia

Nouméa, between baie Magenta and baie de la Mission, intertidal ; 10 specimens in bad condition, to CL 8.5 mm.

Nouméa, Pointe Bogay, intertidal : 1 ♂ CL 8.3 mm.

Nouméa, Ilot Maitre, intertidal : 1 ♂ in bad condition, not measured.

REMARKS

HAIG (1964) and NAKASONE & MIYAKE (1971) reported this species from New Caledonia. NAKASONE & MIYAKE discussed morphological variations and color in their New Caledonian material. Intraspecific variation in *Petrolisthes hastatus* has been noted by several authors, but could not be

examined in the present material because of the fragmented condition of most of the specimens.

DISTRIBUTION

East coast of India to Samoa and north to Japan. Intertidal.

***Petrolisthes lamarckii* (Leach, 1820)**

Pisidia Lamarckii Leach, 1820 : 54.
Porcellana dentata H. Milne Edwards, 1837 : 251.
Porcellana pulchripes White, 1847 : 129 (nom. nud.).
Porcellana speciosa Dana, 1852 : 417 ; DANA, 1855 : pl. 26 fig. 8.
Porcellana bellis Heller, 1865 : 76, pl. 6 fig. 4.
Petrolisthes obtusifrons Miyake, 1937 : 155, 1 fig.
Petrolisthes lamarckii : MIYAKE, 1942 : 342, figs. 7, 8.

MATERIAL

New Caledonia

Nouméa, between baie Magenta and baie de la Mission, intertidal : 1 ♀ CL 11.2 mm.

Nouméa, Ilot Maitre, intertidal : 3 ♂ CL 5.1 to 7.0 mm, 3 ♀ CL 5.4 to 6.0 mm.

DISTRIBUTION

This species occurs intertidally throughout the Indo-west Pacific from the east coast of Africa to the Line Islands and Tuamotu Archipelago. However, I have found no published records from New Caledonia.

***Petrolisthes militaris* (Heller)**

Porcellana annulipes White, 1847 : 63 (nom. nud.).
Porcellana militaris Heller, 1862 : 523.
Petrolisthes annulipes Miers, 1884 : 270, 558, pl. 29 fig. B.
Petrolisthes militaris : MIYAKE, 1943 : 56, figs. 1, 2 ; HAIG, 1964 : 357, fig. 1.

MATERIAL

MUSORSTOM 1

Station 57, 107-96 m : 3 ♂ CL 5.1 to 7.3 mm, 3 ♀ ovig. CL 4.4 to 7.2 mm.

MUSORSTOM 2

Station 28, 90-110 m : 1 ♀ CL 5.9 mm.

Station 47, 84-81 m : 9 ♂ CL 4.3 to 7.1 mm, 2 ♀ CL 4.9 and 7.6 mm, 7 ♀ ovig. CL 4.3 to 6.7 mm, 2 juv.

CORINDON 2, Makassar

Station 206, 85 m : 1 ♂ CL 6.6 mm.

New Caledonia

22°29.6' S, 166°40.8' E. 20-22 m : 1 ♀ CL 5.8 mm.

REMARKS

Both non-ovigerous females from MUSORSTOM 2, Sta. 47 are infected by *Rhizocephala*. A male (CL 6.4 mm) from the same station bore a pair of bopyrids in its right gill chamber ; probably as a result of this parasitization, the porcellanid has both male and female pleopods.

Petrolisthes militaris was reported from the Philippine Islands at Corregidor (WHITE, 1847), San Bernardino Strait, and Sulu Archipelago (HAIG, 1964).

DISTRIBUTION

Red Sea and Moçambique Channel to Papua New Guinea, north to Japan and south to northern Australia. Shallow water to about 180 meters. The known range of the species is now extended eastward to New Caledonia.

***Petrolisthes miyakei* Kropp, 1984**

Petrolisthes miyakei Kropp, 1984 : 93, fig. 2.

MATERIAL

New Caledonia

Nouméa, Ilot Maitre, intertidal : 1 ♀ ovig. CL 5.9 mm.

REMARKS

Petrolisthes miyakei, which was recently described from the Mariana Islands, is distinguished from all other Indo-west Pacific members of the genus by the following combination of characters : Carapace non-striate, with one epibranchial spine on each side but without a supraocular spine ; carpus of chelipeds with a row of four broad teeth on anterior margin and three spines on posterior margin ; chelae flattened, without

submedian longitudinal ridge, and lacking pubescence in gape of fingers ; merus of walking legs armed on anterior margin with a single spine. In most of these characters it agrees with *P. asiaticus* (Leach), but the latter species has three narrow teeth on the anterior margin of the carpus of the chelipeds and a distinct longitudinal ridge on the surface of the chelae.

The specimen from Ilot Maitre agrees in most respects with KROPP's description and illustration, and with paratypic material in the collections of the Allan Hancock Foundation. However, a few differences were noted. The front is broader and less strongly produced, and is trilobate rather than triangular, with low but distinct lateral lobes. There are three, instead of four, broad teeth anteriorly on the carpus of the chelipeds. The various segment of the walking legs are relatively more slender than in *Petrolisthes miyakei*, and the merus of the third leg is armed with a small posterodistal spine.

These differences are perhaps related to the smaller size of the New Caledonian specimen : the description was based on material measuring CL 11.0 to 16.7 mm in males, 10.1 and 14.1 mm in females. Examination of a series of individuals of less than 10 mm in carapace length will be necessary to show whether the points of disagreement with the description are due to normal variation.

DISTRIBUTION

Previously known only from Guam, Mariana Islands ; now New Caledonia. An intertidal species.

***Petrolisthes scabriculus* (Dana, 1852)**

Porcellana scabricula Dana, 1852 : 424 ; DANA, 1855 : pl. 26 fig. 13.

Petrolisthes scabriculus : HAIG, 1964 : 358, fig. 2 ; NAKASONE & MIYAKE, 1968 a : 107, fig. 4 ; NAKASONE & MIYAKE, 1971 : 6.

MATERIAL

New Caledonia

Nouméa, Pointe Bogay, intertidal : ♂ CL 4.4 mm, 1 ♀ ovig. crushed, not measured.

REMARKS

This species was reported from New Caledonia by NAKASONE & MIYAKE (1971).

DISTRIBUTION

Ryukyu Islands, Philippines Islands, Moluccas, Western New Guinea, Western Australia, Queensland, and New Caledonia. Intertidal to about 55 meters.

***Polyonyx* Stimpson, 1858**

***Polyonyx triunguiculatus* Zehntner, 1894**

Polyonyx triunguiculatus Zehntner, 1894 : 185 ; JOHNSON, 1958 : 99, 110 ; LEWINSOHN, 1969 : 158, fig. 35.
Polyonyx acutifrons De Man, 1896 : 384 ; DE MAN, 1898 : pl. 32 figs. 49, 49 a-d.

DISTRIBUTION

Red Sea and islands of western Indian Ocean, Sri Lanka, Singapore, Sumatra, Moluccas, and Western Australia. Littoral to 145 meters.

MATERIAL

CORINDON 2, Makassar

Station 294, 57-46 : 1 ♀ CL 3.3 mm, CB 4.1 mm.

***Porcellanella* White, 1852**

***Porcellanella haigae* Sankarankutty, 1963**

Porcellanella triloba : MIYAKE, 1942 : 368, figs. 28, 29 ; MIYAKE, 1943 : 134, fig. 53. [Not *Porcellanella triloba* White.]
Porcellanella haigae Sankarankutty, 1963 : 273, fig. 1 a-e ; NAKASONE & MIYAKE, 1972 : 142, fig. 3.

REMARKS

This species usually lives in pairs on Pennatulacea. *Pteroeides* is generally cited as the host, but NAKASONE & MIYAKE (1972) reported it from *Cavernularia*.

MATERIAL

New Caledonia

Station 265, 10-30 m, on Pennatulacea : 1 ♂ CL 8.3 mm, 1 ♀ ovig. CL 7.5 mm.

DISTRIBUTION

Seychelles, Gulf of Mannar, Japan, Philippine Islands, and Palau Islands. 18-60 meters. The New Caledonian record considerably extends the known range of the species.

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