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Porcellanidae (Crustacea: Decapoda: Anomura) of New Caledonia and the Loyalty Islands

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The Porcellanidae is a family of crab-shaped anomuran crustaceans. The crabs of the family occur worldwide in primary intertidal and subtidal zones of tropical and subtropical regions, and occupy habitats such as interspaces between rocks, cavities of sponges and soft corals, and hollows in coral reefs. Although numerous species of the Porcellanidae have been recorded from various localities in the Indo-West Pacific region, there are only a few reports on New Caledonian species. Nakasone & Miyake (1971) reported five species from New Caledonia: *Petrolisthes asiaticus* (Leach, 1820), *P. hastatus* Stimpson, 1858, *P. pubescens* Stimpson, 1858 (as *P. tomentosus* (Dana, 1852)), *P. scabriculus* (Dana, 1852), and *Pisidia dispar* (Stimpson, 1858). Subsequently, Haig (1989) recorded nine species from the island: *Aliaporcellana pygmaea* (de Man, 1902), *Lissoporcellana quadrilobata* (Miers, 1884), *Petrolisthes fimbriatus* Borradaile, 1898, *P. hastatus*, *P. lamarckii* (Leach, 1820), *P. miyakei* Kropp, 1984, *P. militaris* (Heller, 1862), *P. scabriculus*, and *Porcellanella haigae* Sankarankutty, 1963. Osawa (1996) concluded that the New Caledonia specimen of *P. miyakei* should be referred to his new species, *P. trilobatus*, on the basis of the intraspecific variations treated by Haig (1989) and additional distinctions found in his material.

The present study reports on the porcellanid crabs recently collected from shallow waters around New Caledonia and the Loyalty Islands and deposited in the collections of the Muséum national d'Histoire naturelle, Paris. The material contains 31 species: two species of *Aliaporcellana* Nakasone & Miyake, 1971, one of *Capilliporcellana* Haig, 1978, two of *Enosteoides* Johnson, 1970, one of *Heteropolyonyx* Osawa, 2001, four of *Lissoporcellana* Haig, 1978, two of *Pachycheles* Stimpson, 1858, 11 species of *Petrolisthes* Stimpson, 1858, one of *Pisidia* Leach, 1820, six of *Polyonyx* Stimpson, 1858, and one of *Porcellana* Lamarck, 1801. Three species of them, one of *Lissoporcellana* and two of *Polyonyx*, are new to science. The occurrences of eight species in New Caledonia and the Loyalty Islands greatly extend their previously known distribution ranges. These species include *Enosteoides melissa* (Miyake, 1942), *E. palauensis* (Nakasone & Miyake, 1968), *Heteropolyonyx biforma* Osawa, 2001, *Lissoporcellana nakasonei* (Miyake, 1978), *Petrolisthes perdecorus* Haig, 1981, *Polyonyx pedalis* Nobili, 1905, *P. triunguiculatus* Zehntner, 1894, and *Porcellana habei* Miyake, 1961.

The undescribed species of *Lissoporcellana* resembles *L. flagellicola* Osawa & Fujita, 2005 known from the Ryukyu Islands and *L. quadrilobata* (Miers, 1884) widely distributed in the Indo-West Pacific, in the shape of the rostrum and carpi of the chelipeds being unarmed on the dorso-extensor margin. However, the New Caledonian species is distinguished from these two congeners by the branchial margin of the carapace being more strongly convex, lateral lobes of the rostrum being much narrower than the median lobe and unarmed on the mesial margin, and basal article of the antennular peduncle with an anterolateral spine (unarmed in *L. flagellicola* and *L. quadrilobata*).

The one of the two undescribed species of *Polyonyx* is close to *P. utinomii* Miyake, 1943 known from Japan and the Maldives. These two species share the following characters: carapace

covered with delicate, long, transverse striae on the dorsal surface; rostrum without a distinct fringe of setae on the anterior margin; and dactyli of the ambulatory legs each with a bifurcate claw, flexor claw being much larger than the extensor. However, the species from the Loyalty Islands is different from *P. utinomii* in the frontal margin of the carapace bearing long simple setae (short setae in *P. utinomii*), merus of the third maxilliped with the flexor lobe being marginally dentate (smooth in *P. utinomii*), merus of the cheliped with a comparatively narrower, roundly subrectangular lobe on the dorsoflexor distal margin (broad, rounded lobe in *P. utinomii*), and ambulatory legs bearing longer and more numerous setae.

Another one undescribed species of *Polyonyx* was collected from the Loyalty Islands and also from the Philippines. The spines on the flexor margins of the meri of the ambulatory legs are found only in this species and *P. pedalis* Nobili, 1905 (known from the Red Sea, Kei Islands in Indonesia, and New Caledonia) of the genus. However, the two species are distinguished by the shape of the carapace and the third thoracic sternite, and the strength of spines on the meri of the ambulatory legs.