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Neoliomera moana, a new cavernicolous species of xanthid crab from the Marquesas Islands (Crustacea: Decapoda: Brachyura)

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Abstract

A new crab Liomerinae, *Neoliomera moana* **sp. nov.**, is described from the Marquesas Islands, based on three specimens collected by hand at the entrance of submarine caves at depths of 6–28 m. Within the genus the new species belongs to a group of six species that have the carapace cristate on the anterolateral margins. It can be recognized by the presence of a double crest on the upper margin of the palm of chela and by its colour pattern, with about twenty red spots on the dorsal surface of the carapace. This new species is considered has a potential endemic form to the Marquesas Islands.

Key words: Decapoda, Crustacea, Brachyura, Xanthidae, *Neoliomera*, new species, cavernicolous crabs, taxonomy, Marquesas Islands

Résumé

Un nouveau crabe Liomerinae, *Neoliomera moana* **sp. nov.**, est décrit des îles Marquises à partir de trois spécimens récoltés à la main à l'entrée de grottes sous-marines, à une profondeur de 6–28 m. La nouvelle espèce appartient dans le genre à un groupe de six espèces qui ont le bord antérolatéral de la carapace marginée. Elle se distingue par la présence de deux carènes sur le bord supérieur de la paume du chélipède et par sa coloration, avec une vingtaine de points rouges sur la face dorsale de la carapace. Cette nouvelle espèce est considérée comme une forme potentiellement endémique des îles Marquises.

Introduction

A scientific expedition ("*Pakaihi i te Moana*", or "respect of the ocean" in the Marquesan language) was carried out in 2011–2012, by the Agence des Aires Marines Protégées (AAMP, Brest, France) in collaboration with the French Polynesia government, the Marquesas Islands local authorities, and four scientific institutions, the Centre National de la Recherche Scientifique (CNRS), Institut Français pour le Développement (IRD), Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER), and the Muséum national d'Histoire Naturelle, Paris (MNHN). The main goal of the expedition was to increase our knowledge of the marine life in these distant and relatively unspoiled islands, and study possibilities for its management. The expedition took place from November 2011 to February 2012, with four distinct legs. Legs 1, 2, and 4 were dedicated to study, respectively, coastal fishes, algae and invertebrates of littoral and shallow waters, and pelagic species. Leg 3 (10–30 January 2012) was dedicated to study the biodiversity in marine caves and depth waters, with scuba dives made in marine caves at depths of 10–50 m and submersible dives with a remotely operated vehicle (ROV) at depths of 50–550 m. The deep-water decapod crustaceans observed by the ROV during leg 3 were listed by Poupin *et al*. (2012). We describe herein a new species of xanthid crab collected by scuba in marine caves.

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with a pattern of spots on the dorsal surface of the carapace (see Sakai, 1976: pl. 142, fig. 2). In *N. richteroides*, however, the spots are white, smaller, and much more numerous (about 50).

Lai *et al.* (2001) have indicated that a new subfamily may have to be established to accommodate *Neoliomera*. The new species shows morphological characters of the *Neoliomera* clade as defined by these authors (Lio 2): presence of supplementary slits/grooves in the male sterno-abdominal cavity (at level of thoracic sternite 4) (Fig. 4E:'s') to accommodate the distal end of G1; fused male thoracic sternites 1 and 2 widely triangular and prominent (Fig. 4E: 'st 1-2'); presence of a dactylo-propodal lock on the ambulatory legs (Fig. 4D: 'dpl'); and male thoracic sternite 1 ridge not bifurcated.

Ecology and geographical distribution. All specimens of *Neoliomera moana* **sp. nov.** were collected by hand at the entrance of submarine caves at depths of 6–28 m. The crabs were found while digging through piles of coarse, unconsolidated rubble and searching under loose rocks, with the substrate consisting mostly of coral rubble, sand and gravel. Additional specimens of this distinctively coloured species were observed on Fatu Hiva I., suggesting the species was at least locally common. The new species is probably not intimately associated with life in caves as it does not have any special adaptation (*e.g.* very small size of cornea) and was not located deep inside the caves. In that aspect it resembles to *Neoliomera cerasimus* (Ng, 2002), another non obligate cave-dwelling species with similar size of cornea (see Ng, 2002: 97, fig. 2b). *Neoliomera moana* **sp. nov.** is presently known from the Marquesas Islands only (Fatu Hiva and Ua Pou islands) and is potentially endemic to the archipelago.

Key to *Neoliomera* species of the 'cristate-group'.

The key to the genus in Serène (1984: 68) includes all species of the genus with the carapace cristate on anterolateral margin (entries 6–9), except for *Neoliomera moana* **sp. nov.** At entry 9 it is updated, as presented below, to include the new species.

9. Upper border of palm crested with two parallel crests separated by a furrow; P5 merus is cristate on proximal half of upper margin . . . . . *N. moana* **sp. nov.**
- Upper border of palm rounded or angular, covered with granules; P5 merus not cristate on upper margin 9a
9a. Dorsal surface of carapace entirely setose and covered with small granules . . . . . *N. praetexta*
- Dorsal surface of carapace is glabrous, covered with granules that are obliterated on the central and posterior parts . . . . . *N. richteroides*

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