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## New records of processid shrimps from the Indo-West and East Pacific (Crustacea: Decapoda)

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### Abstract

New records are presented for the caridean shrimp family Processidae in Indo-West and East Pacific waters, based mainly on recently collected material. These records highlight that many processid species may be relatively widespread, although the distribution of some species remains imperfectly known. The colour pattern of several species is here documented for the first time, showing its potential use as an additional identification character. The available information on the ecology of the reported species is summarised.

**Key words:** Decapoda, Processidae, Indo-Pacific, new records, colour pattern

### Introduction

The Processidae is a relatively species-poor family, with currently only 65 species placed in 6 genera (De Grave & Fransen 2011; Hendrickx 2012). However, they can be very abundant in certain habitats, notably tropical seagrass beds (e.g. Ledoyer 1969, 1970, 1984; Unsworth *et al.* 2007, 2011). A solid foundation for their taxonomy was laid down by Hayashi (1975), who reviewed all Indo-Pacific species and provided a worldwide key to all then known taxa. Since then only a handful of species have been described in the Indo-Pacific (e.g. Hayashi 1981; Noël 1986; Burukovsky 1990, 2007), with the last worldwide key provided by Noël (1986). Despite their apparent solid taxonomic framework, processid distribution and ecology in the Indo-Pacific remains poorly known, even for purported widespread taxa, quite probably linked to their nocturnal lifestyle (e.g. Unsworth *et al.* 2010) and general rarity in samples. In this contribution, accumulated material in several museums is reported upon, which sheds further light on their distribution.

In recent years, much emphasis has been placed on colour patterns of caridean shrimps, notably Alpheidae and Pontoniinae. In contrast, the colour patterns in Processidae and indeed their potential use for species identification has been poorly documented and discussed. This was recently highlighted by De Grave & Felder (2012), who noted potential differences in colour pattern between two common Caribbean species, but at the same time drew attention to diurnal differences in pattern and discrepancies with older colour descriptions. Besides from photos published in several popular underwater guide books, for instance, *Hayashidonus japonicus* (De Haan, 1844) in Kuitert & Debelius (2009) and *Nikoides maldivensis* Borradaile, 1915 in Minemizu (2013), there appear to be no known specimen matched photos of Indo-Pacific Processidae at present in the scientific literature. This is here rectified for several taxa, which in some species shows promise as an aid in field identification. As however, the colour pattern in Processidae is highly influenced by time of the day, more specimen-matched photographic images need to be accumulated to fully ascertain its usefulness in species identification.

The material reported herein primarily originates from three sources: (1) fieldwork carried out over the last decade in the Indo-Pacific by the Oxford University Museum of Natural History, Oxford, UK (OUMNH) and miscellaneous donations to that collection; (2) recent expeditions by the Florida Museum of Natural History, University of Florida, Gainesville, USA (FLMNH UF); and (3) unreported as well as recently collected material in