



Johngarthia cocoensis, a new species of Gecarcinidae MacLeay, 1838 (Crustacea, Decapoda, Brachyura) from Cocos Island, Costa Rica

ROBERT PERGER^{1,4}, RITA VARGAS² & ADAM WALL³

¹Centro de Investigación en Ciencias del Mar y Limnología (CIMAR), Universidad de Costa Rica, 11501-2060 San José, Costa Rica
E-mail: robertperger@hotmail.com

²Museo de Zoología, Escuela de Biología, Universidad de Costa Rica, 11501-2060 San José, Costa Rica

³Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA 90007, USA

⁴Corresponding author

Abstract

A new species of Gecarcinidae MacLeay, 1838, *Johngarthia cocoensis* n. sp. from Cocos Island (Costa Rica) is described and illustrated. The new species closely resembles *J. malpilensis* (Faxon, 1893), from which it can be separated by the inner apical lobes of the third maxilliped meri mostly separated from each other in resting position, palp of third maxilliped merus partly exposed and epistomial carapace tooth completely exposed.

Key words: taxonomy, biogeography, new species, Central America, Tropical Eastern Pacific region

Introduction

Cocos Island, situated approximately 550 km west from the southern coast of Costa Rica, is distinguished by high rainfall and by being the only oceanic island in the eastern Pacific with a tropical rain forest (Trusty *et al.* 2006). Despite a relatively young age of about two million years (Castillo *et al.* 1988), Cocos I. has a high rate of endemism (Hogue & Miller 1981; Montoya 2001). Among the decapods, the brachyurans are the most diverse taxon on this island, with 68 species, none of which are considered endemic (Vargas & Wehrtmann 2009). Zimmerman & Martin (1999), however, noted that the brachyuran fauna of the island is less known when compared to the other oceanic islands of the tropical eastern Pacific (notably Revillagigedo, Clipperton, and the Galápagos islands). Previous studies of the brachyuran fauna of the island focused on the marine and fresh-water species (Vargas & Wehrtmann 2008). The only published contributions on the terrestrial brachyurans of Gecarcinidae MacLeay, 1838, was a study of *Cardisoma crassum* (Smith, 1870) by Gomez (1977) and a distributional record for *Johngarthia planatus* (Stimpson, 1860) by Vargas & Wehrtmann (2008). Although the latter species is also found on islands of the Gulf of California, Revillagigedo Is. and Clipperton (Rathbun 1918, Bouchard & Poupin 2009), the second eastern Pacific species of this genus, *J. malpilensis* (Faxon, 1893), is considered to be endemic to Malpelo I. (López-Victoria & Werding 2008).

The examination of specimens of *J. planatus* collected from Cocos I. between 1973 and 2001 and deposited in the collection of the zoological museum of the University of Costa Rica revealed that all these specimens actually belong to an undescribed species. *Johngarthia cocoensis* n. sp. is thus described and illustrated.

Methods

Measurements were taken with digital calipers. For isometric relationships, mean ratios with standard deviation (STABW) are provided. Ratios of males and females were pooled. Equations are provided for allometric relationships. The description of the first gonopod is based on the terminology of Smalley (1964).