



Phylogeny of *Calyptraeotheres* Campos, 1990 (Crustacea, Decapoda, Brachyura, Pinnotheridae) with the description of *C. pepeluisi* new species from the tropical Mexican Pacific

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Abstract

A reassessment of the adult and larval morphology as well as comparison with published molecular information confirms the monophyly of the genus *Calyptraeotheres* Campos, 1990, and its relationship with *Dissodactylus* Smith, 1870, *Clypeasterophilus* Campos & Griffith, 1990 and *Tumidootheres* Campos, 1990. *Calyptraeotheres pepeluisi* **new species**, is described from Michoacán, Mexico on the basis of a female specimen. The new species is distinguished from the other nominal species of the genus by having a subarcuate carapace with longer setae on its front and anterolateral margin, the eyes are dorsally visible, and a third maxilliped with a 2-segmented palp and a conical propodus.

Key words: Decapoda, Crustacea, Brachyura, Pinnotheridae, *Calyptraeotheres*, phylogeny, new species, Mexico

Introduction

The genus *Calyptraeotheres* Campos, 1990 comprises four species of pinnotherid crabs associated with limpets of the superfamily Calyptraeidea (*Crepidula* Lamarck, 1799, *Calyptraea* Lamarck, 1799 and *Crucibulum* Schumacher, 1817) (see Campos 1990, 1999; Hernández-Ávila & Campos 2006). Among the pinnotherids deposited in the National Crustacean Collection of the Universidad Nacional Autónoma de México (CNCR), the first author discovered an ovigerous female that was collected off the coast of Michoacán, in the Pacific coast of Mexico. The morphology of this specimen concurs with *Calyptraeotheres*, and it was shown that the material belonged to a new species, related to *C. hernandezii* Hernández & Campos, 2006, and *C. granti* (Glassell, 1933). These three species share a third maxilliped with the palp of the endopod having only two segments (the dactylus is absent). An empirical and cladistic reassessment of the adult and larval morphology, respectively, and the comparison with the results provided from molecular data (Palacios-Theil *et al.* 2009) allow us to examine the monophyly of *Calyptraeotheres* and its presumptive phylogenetic relationships with alien genera.

Material and methods

The female holotype of *Calyptraeotheres pepeluisi* **new species** was dredged during the oceanographic expedition Atlas IV in July 1983 on board of the R/V El Puma of the Universidad Nacional Autónoma de México (UNAM). The holotype is deposited in the National Collection of Crustacean (CNCR) of the Instituto de Biología, UNAM. Abbreviations used include CL, carapace length; CW, carapace width; MXP3, third maxilliped; WL, walking legs; All measurements are in millimeters.