



Coral-associated decapods (Crustacea) from the Mexican Tropical Pacific coast

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Abstract

Our study provides a checklist of 36 crustacean decapods from the Mexican tropical Pacific coastline. Most of the species were previously recorded from coral communities in the Gulf of California. Data were obtained by visual censuses of coral communities and some specimens were collected by extractions of coral branches (approximately eight liters of coral volume). We found new geographic records for three species from the Eastern Pacific and seven species that have extended ranges into Mexican waters. Only one species is documented with a northerly range from Central America to Mexican waters.

Key words: Co-occurrence, Checklist, Geographic limits, Reef invertebrates

Introduction

Coral reefs are biogenic constructions of aragonitic limestone that protect and determine the physical structure of the coastline (Knowlton & Jackson 2001). There is a wide variety of species that inhabit reefs, and crustaceans are among the best represented in number of species (Abele 1976; Alvarado & Vargas-Castillo 2012) comprise a wide variety of ecological groups (Enoch *et al.* 2011), of which fish are the most studied group. Invertebrates have been poorly studied, but crustacean decapods seem to be the most abundant macroinvertebrates that inhabit corals. In the eastern Pacific, decapods crustaceans are very abundant (Gotelli & Abele 1983), notwithstanding, there are few studies of ecology and or taxonomy of coral-associated fauna in the area. From the taxonomic perspective, a number of inventories exist for Costa Rica (Abele 1976; Gotelli & Abele 1983; Alvarado & Vargas-Castillo 2012) and the southern region on the eastern Tropical Pacific (Edgar *et al.* 2011), as well as for southern Mexico (Huatulco region; 15°N; Ramírez-Luna *et al.* 2002) and the lower Gulf of California (Hernández *et al.* 2009, 2010). Working on coral habitats is interesting and challenging because of the diversity of species that the reefs host (Enoch *et al.* 2011), and because of the special methods required to avoid damaging the coral (AGRRA 2005). Data gathering by visual census has been used for many years to assess reef-fish populations and is regarded as relatively accurate and cost effective (Halford & Thompson 1994, Durville *et al.* 2003). In recent years, visual censuses have been used to survey benthic invertebrates successfully (Alvarado *et al.* 2011) and consequently the monitoring of species living inside coral colonies using this method can provide good inventories for evaluation of species, richness and complements data that are obtained by direct collecting.

Along the Panamic province, the distributions for most coastal decapods have been studied punctually in some places as the Gulf of California, Panama, Costa Rica, and the Galápagos Islands. However, there are no studies focused on the coastal decapods between the Gulf of California and Central America. As a result, the ranges for most species frequently show a distribution gap. Our study is a contribution to the knowledge of the composition of the decapods that are associated with coral communities from the Mexican tropical Pacific coast (*sensu* Hendrickx 1993).