

# First record of *Potamogebia operculata* (Schmitt, 1924) (Thalassinidea: Upogebiidae), in Venezuelan waters.

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## Abstract

The ghost shrimp *Potamogebia operculata* is recorded in Venezuela for the first time, on the basis of two specimens (1 male and 1 ovigerous female) that were collected by hand in coral crevices of shallow waters of the Island of La Tortuga (southeastern Caribbean). This species is characterized by the absence of postocular spine, rostrum exceeding eyestalks, chelipeds with fixed finger as long as dactylus, fifth and sixth abdominal segments ornamented with pattern of rugae dorsally, distal margin of telson wider than the proximal one, with longitudinal ribs dorsally. The known range of *P. operculata* extends from northwestern Florida (USA) throughout the Caribbean Sea to Brazil. The record of this species increases the number of ghost shrimps known from Venezuela to 25.

**Key words:** biodiversity, Caribbean, benthos, crustacean, Decapoda, *Potamogebia*

## Introduction

Thalassinid shrimps constitute a singular group of marine crustaceans distributed worldwide along the littoral and sublittoral zones of tropical and subtropical waters, and usually inhabiting anoxic sediments and their success seems to depend on their metabolic adaptations (Blanco-Rambla, 1996).

Thalassinids have been a crustacean group scarcely studied in Venezuela (Blanco-Rambla, 1996). Their first record in Venezuelan marine waters was presented by Biffar (1970), who described the ghost shrimp *Eucalliax quadraculata*, based on some specimens collected at late XIX century in waters of the state of Sucre. Up to date, 24 species belonging to six families have been reported: Axiidae (1 genus and 1 species), Micheleidae (1 genus, 1 species), Upogebiidae (1 genus, 5 species), Callianideidae (1 genus, 1 species), Ctenochelidae (2 genera, 3 species) and Callianassidae (8 genera, 13 species) (Biffar, 1971; Rodríguez, 1980; Williams, 1993; Blanco and Liñero, 1994; Blanco-Rambla, 1995, 1996, 1999; Blanco-Rambla and Lemaitre, 1999; Blanco-Rambla *et al.*, 1995). This study deals with the presence of the ghost shrimp *Potamogebia operculata* in Venezuelan marine waters. Photographic evidence and diagnosis of the collected specimens are provided.

## Material and Methods

Two specimens of *Potamogebia operculata* were extracted from coral crevices found at 1.5 m deep, in Carenero lagoon, La Tortuga island (10°53'34"N – 65°14'47"W). The specimens were preserved in 90 % ethylic alcohol.

The Carapace Length (CL) cover the distance from the frontal margin to the posterior margin of the carapace. The total length (TL) represents the distance from the orbital margin to the telson distal margin. Both measurements were made with a caliper (0.5 mm precision).

The material is deposited at the Laboratorio de Carcinología, Universidad de Oriente, at Boca de Río, Margarita island.

## Results

*Pomatogebia operculata* (Schmitt, 1924)

Figs. 1, 2

*Upogebia (Gebiopsis) operculata* Schmitt, 1924: 91, Lam. V: figs. 1-4.

*Gebiopsis hartmeyeri*.- Balss, 1924: 178, figs. 1,2,

*Upogebia operculata*.- Thistle, 1973: 1,2,14,23.- Coelho and Ramos-Porto, 1987: 35,36.- Scott et al., 1988: 483-495, figs. 1a,2b,3a,b,4a,5a,7,8.

*Upogebia (Calliadne) operculata*.- De Man, 1928:24,37,50.- Schmitt, 1935: 197, fig. 59.

*Pomatogebia opercula*.- Williams and Ngoc Ho, 1990:614, fig. 1.- Williams, 1993: 10-13, fig. 5.- Melo, 1999: 402, fig. 270.

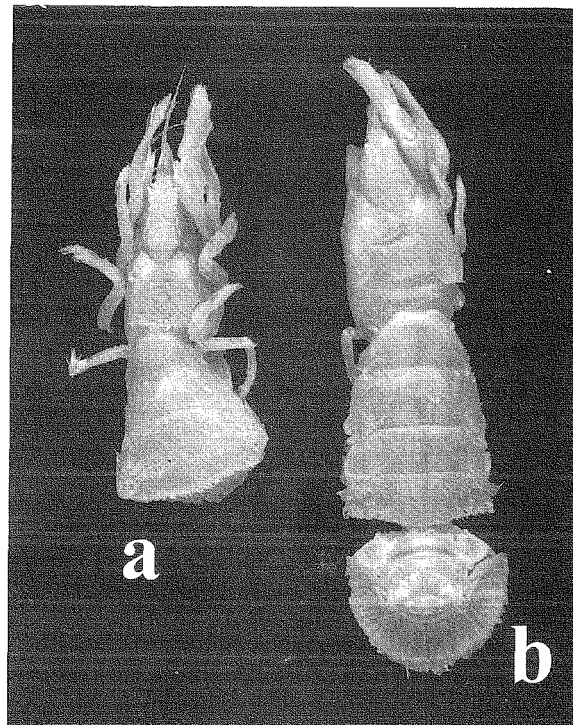
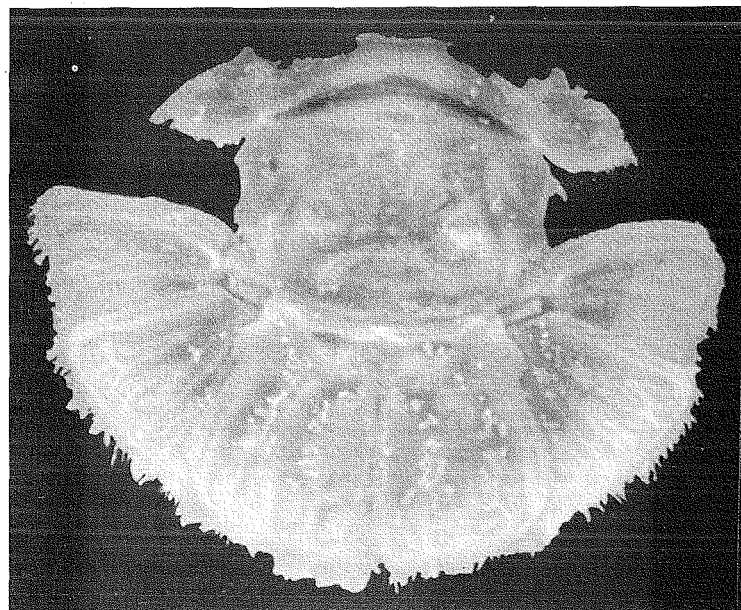


Figure 1: *Pomatogebia operculata* a) male, b) ovigerous female.



Nauplius

Figure 2: *Pomatogebia operculata* somits AV-AVI and tail fan

**Material examined:** Carenero lagoon, La Tortuga island (10°53'34"N – 65°14'47"W), 1.5 m depth, 06/06/2001: 1 male, 1 ovigerous female, in coral crevices; coll. I. Hernández, J. Bolaños and J. Hernández.

**Diagnosis:** Anterior carapace dorsally compressed (flattened), setosous; with spines decreasing in size posteriorly. Two grooves run parallel to the lateral margins of the anterior carapace, each flanked by a row of spines. Rostrum subtriangular, barely deflected; a pair of subterminal spines near the lateral margin exceeding eyestalk. Cervical groove deep and continuous. Postocular margin sinuous and spineless. Eyestalk exceeding the distal end of second article of antennular peduncle.

Chelipeds setosous, spineless. Carpus with a longitudinal groove. Palm with longitudinal fringes of setae. Fixed finger as long as dactylus.

Second pair of pereopods spineless, longer and more setosous than the others. Dactylus of pereopods less than a half the large of propodus.

Abdomen arched dorsally on segments I - IV, tergum of this segments with dense fringe of setae on posterior margin and a transverse band across the anterior half. Dorsal surface of abdominal segments V and VI with symmetrical rugae.

Uropods ornamented as telson. Tail fan with dense fringe of setae on distal margin that joins with the two last abdominal segments, forming a subcircular operculum when extended. Distal end of telson broader than proximal one, sides diverging posteriorly, surface eroded and bearing 6 ribs longitudinally.

**Measurements:** Male: CL: 3.90 mm, TL: 21.10 mm; Ovigerous female: CL: 4.05 mm, TL: 27.00 mm.

**Color:** The preserved specimens were pale crème and reddish colored.

**Remarks:** The family Upogebiidae has five genera: *Upogebia* (78 species), *Tuerkayogebia* (1 species), *Wolffogebia* (3 species), *Gebiacantha* (11 species) and *Pomatogebia* (3 species). The genus *Pomatogebia* was erected by Williams and Ngoc-Ho (1990) for 3 species of ghost shrimp from western Atlantic (*P. operculata*) and eastern Pacific (*P. rugosa* and *P. cocostia*) previously placed in *Upogebia*. *P. operculata* became the type species of the genus. Members of this genus could be distinguished from those of the genus *Upogebia* by their operculate abdomen and their multiribbed telson with convex posterior margin and divergent lateral margins. *Upogebia* lacks of operculate abdomen, and its telson is basically rectangular, and margin never divergent and never displays multiple longitudinal ribbing (Williams and Ngoc-Ho, 1990, Williams, 1993).

This species has been reported from USA, Bahamas, Jamaica, Hispaniola, Lesser Antilles, Mexico, Honduras, Panama, Colombia and Brazil (Williams, 1993). This is the first record of the species from Venezuela.

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