



## A new species of the alpheid shrimp genus *Triacanthoneus* Anker, 2010 (Crustacea: Alpheidae) from Belize

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### Abstract

A new species of the alpheid shrimp genus *Triacanthoneus* Anker, 2010, is described based on material collected in a marine cave off Caye Chapel, Belize. *Triacanthoneus chapelianus* sp. nov. is the fifth species in the genus and can be distinguished from the other four species by the position of the dorsolateral teeth on the carapace, which in the new species have an anterior (= submarginal) position, and by the configuration of the posterior margin of the telson, with a notch in the middle portion and two pairs of spines and one pair of plumose setae. A key to the five species of *Triacanthoneus* is provided.

**Key words:** Caridea, Alpheidae, *Triacanthoneus*, Belize, cave shrimp, new species

### Introduction

The genus *Triacanthoneus* Anker, 2010 is composed by four species of small alpheid shrimps distributed in the coastal waters of the Pacific coast of Colombia and Panama, and in the western Atlantic from the Caribbean coast of Panama to the southern Gulf of Mexico (Anker, 2010; Alvarez *et al.*, 2012). *Triacanthoneus* is a rarely collected genus, with currently only 11 individuals known, representing four species, *T. toro* Anker, 2010, *T. pacificus* Anker, 2010, *T. alacranes* Anker, 2010, and *T. akumalensis* Alvarez, Iliffe, Gonzalez & Villalobos, 2012, one of them (*T. alacranes*) was described based on a single individual.

Anker (2010) in the diagnosis of *Triacanthoneus* stated that the genus was characterized by three teeth on the carapace, one in a mediodorsal position on the posterior half of the carapace and two in post-hepatic position, a pattern that is seen in the four known species so far. Here we describe a new species from Caye Chapel, Belize, in which a different pattern is observed: the mediodorsal tooth is on the anterior half of the carapace and the pair of lateral teeth are in a submarginal position behind the orbits. In addition to the unique position of the teeth on the carapace, the single specimen from Caye Chapel has a distinct posterior margin of the telson with a notch similar to that of *T. akumalensis* Alvarez, Iliffe, Gonzalez & Villalobos, 2012, but with an additional pair of setae.

The holotype of the new species is deposited in the Colección Nacional de Crustáceos, Instituto de Biología, Universidad Nacional Autónoma de México, Ciudad de México, Mexico (CNCR). Abbreviations used in the text are: cl, carapace length; tl, total length.

### Taxonomy

#### Family Alpheidae Rafinesque, 1815

#### Genus *Triacanthoneus* Anker, 2010

The holotype of *T. chapelianus* **sp. nov.**, described as an ovigerous female, has a well-developed appendix masculina on the second pleopod, a characteristic already reported for the three species of *Triacanthoneus* described by Anker (2010) (*T. toro*, *T. pacificus*, *T. alacranes*), but not found in all specimens of the type series of *T. akumalensis*, where one ovigerous individual, designated as “female” did not have appendix masculina, while another “ovigerous specimen” had a well-developed appendix masculina (Alvarez *et al.*, 2012).

Egg size is remarkably uniform in *Triacanthoneus* regardless of the two types of habitats: the eggs of the shallow coastal species *T. toro* and *T. alacranes* measure 0.65 x 0.36 mm and 0.6 x 0.38 mm, respectively (Anker 2010); while they measure 0.5 x 0.33 mm in *T. akumalensis* and 0.5 x 0.35 mm in *T. chapelianus*, the two cave species (Alvarez *et al.* 2012; present study). This suggests that the larval development of the cavernicolous species of *Triacanthoneus* is not advanced as observed in many other cave shrimps.

Although all species of *Triacanthoneus* are found in coastal areas, *T. toro*, *T. pacificus* and *T. alacranes* were collected in shallow/intertidal habitats in substrates with sand, seagrasses or rubble (Anker 2010), whereas, in contrast, *T. chapelianus* and *T. akumalensis* were collected in marine caves at shallow depths, 8–10 m for the former, and moderate depths, 25–40 m for the latter (Alvarez *et al.* 2012; present study).

### Key to the species of *Triacanthoneus* (modified from Anker, 2010)

1. Orbital margin of carapace forming acute tooth-like projection, dorsolateral teeth slightly anterior to mediodorsal tooth . . . . . *Triacanthoneus alacranes* Anker, 2010
- Orbital margin of carapace without tooth-like projection, dorsolateral teeth clearly anterior to mediodorsal tooth . . . . . 2
2. Eyes not visible in dorsal view covered by carapace, tip of rostrum reaching midportion of third antennular article . . . . . *Triacanthoneus akumalensis* Alvarez, Iliffe, Gonzalez & Villalobos, 2012
- Eyes visible in dorsal view, tip of rostrum reaching midportion of second antennular article . . . . . 3
3. Dorsolateral teeth of carapace in a submarginal position near orbital margin; posterior margin of telson with distinct medial U-shaped notch . . . . . *Triacanthoneus chapelianus* **n. sp.**
- Dorsolateral teeth of carapace in hepatic position; posterior margin of telson straight, without U-shaped notch . . . . . 4
4. Major chela with fingers longer than palm, ventral tooth of rostrum directed forwards . . . . . *Triacanthoneus toro* Anker, 2010
- Major chela with fingers shorter than palm, ventral tooth of rostrum directed downwards . . . . . *Triacanthoneus pacificus* Anker, 2010

### Acknowledgments

Cave collections in Belize in 1989 were supported by a grant from the Smithsonian Institution’s Caribbean Coral Reef Ecosystems Program awarded to T. M. Iliffe. Serban Sârbu helped with cave diving collections and sorting of specimens. Frank Bunting of the Belize Diving Services at Caye Caulker provided logistical and cave diving assistance. We gratefully acknowledge the Belize Department of Archeology and its Commissioner, the late Harriot W. Topsey, for granting us permission to carry out these investigations. The first author gratefully acknowledges the support of CONACYT grant 155644 “Processes that create and maintain the biodiversity in an extreme environment: the Anchialine systems of Yucatan”. The manuscript was improved with the revisions made by A. Anker and M.R. McClure.

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