



## Description of a new deep-water species of *Alpheus* Fabricius, 1798 from the Gulf of Mexico (Crustacea, Decapoda, Alpheidae)

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### Summary

A new deep-water species of the snapping shrimp genus *Alpheus* Fabricius, 1798 is described from two offshore localities in the northern Gulf of Mexico, south of Louisiana. *Alpheus lentiginosus* n. sp. belongs to the *A. macrocheles* (Hailstone, 1835) species group and is most closely related to the western Atlantic *A. pouang* Christoffersen, 1979 and *A. amblyonyx* Chace 1972, the eastern Atlantic *A. platydactylus* Coutière, 1897 and *A. macrocheles* (Hailstone, 1835), and perhaps also to the eastern Pacific *A. exilis* Kim & Abele, 1988. The new species is associated with deep-water soft sediments adjacent to clusters of *Lophelia pertusa* (L.) (Scleractinia) or mud-covered rocks and cobble, at a depth range of 336–438 m, thus representing the deepest-known record of the Alpheidae in the Gulf of Mexico and the entire western Atlantic.

**Key words:** Caridea, Alpheidae, *Alpheus*, Gulf of Mexico, western Atlantic, deep-water reefs, new species

### Introduction

The speciose snapping shrimp genus *Alpheus* Fabricius, 1798 contains close to 300 species distributed mostly in tropical and subtropical shallow waters from the upper intertidal to about 50 m. However, this genus also contains a number of deep-water species, some reaching depths of around 500 m, e.g., in the northern Indian Ocean (Alcock & Anderson 1899) and central-eastern Pacific (Burukovsky 1990), or even below 1000 m, e.g., in the eastern Atlantic (Garcia Raso 1996). In the western Atlantic, the deepest records of *Alpheus* until now were those of *A. pouang* Christoffersen, 1979 at 268 m and *A. cf. amblyonyx* at 243–304 m (Williams 1988). Deep-water benthic shrimps are usually collected by different types of dredges and trawls or by grab samples, and alpheids collected in this manner are often damaged, sometimes missing chelipeds, pereopods, or other appendages.

Recently, two complete specimens of *Alpheus* were collected during dives conducted at deep-sea coral habitats in the northcentral and northeastern Gulf of Mexico during USGS-sponsored *Lophelia* I (2004) and *Lophelia* II (2009) expeditions, using the manned submersibles *Johnson Sea Link* I and II (JSL I and II). More precisely, these specimens were collected incidentally by the suction sampler attached to the manipulator arm of the JSL. They were immediately placed in collection buckets, photographed alive and then preserved in 70% ethanol. The first author examined this material and confirmed that both specimens belong to the same, hitherto unnamed species, which is here described as new. Both type specimens are deposited in the collections of National Museum of Natural History, Smithsonian Institution, Washington DC, USA (USNM). The carapace length (CL) was measured along the mid-line of the carapace from the tip of the rostrum to the posterior margin. Abbreviations used in the text: Mxp – maxilliped; P – pereopod.