



Revision of the *Alpheus formosus* Gibbes, 1850 complex, with redescription of *A. formosus* and description of a new species from the tropical western Atlantic (Crustacea: Decapoda: Alpheidae)

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Abstract

The *Alpheus formosus* Gibbes, 1850 complex is revised based on materials from the eastern Pacific and western Atlantic. Three species are recognized: *Alpheus panamensis* Kingsley, 1878 in the eastern Pacific, ranging from the Gulf of California to the Galapagos Archipelago; *A. formosus* Gibbes, 1850 (synonym: *A. poeyi* Guérin Méneville, 1857) in the western Atlantic, ranging from North Carolina and throughout the Caribbean to southern Brazil; and *A. paraformosus* n. sp., presently known only from the southwestern Caribbean (Panama) in the western Atlantic. *Alpheus paraformosus* n. sp. differs from *A. formosus* and *A. panamensis* by the distinctly shorter rostral furrows, the absence of balaeniceps setae on the fingers of the minor chela, and also several subtle but discrete features in the color pattern. *Alpheus formosus* is redescribed based on recently collected material. A female specimen from Florida Keys is designated as neotype of *A. formosus*. Morphology, color and genetics all suggest that *A. formosus* and *A. panamensis* are transisthmian sister species, with *A. paraformosus* n. sp. being their nearest relative.

Key words: *Alpheus*, snapping shrimp, Alpheidae, eastern Pacific, western Atlantic, color pattern, transisthmian species, new species, Caribbean, molecular phylogeny, barcode, COI

Introduction

The western Atlantic *Alpheus formosus* Gibbes, 1850 and the eastern Pacific *A. panamensis* Kingsley, 1878 are among the most common intertidal and shallow subtidal snapping shrimps on the American tropical and subtropical coasts (Chace 1972; Kim & Abele 1988). They differ from other species of *Alpheus* by the combination of the following features: the orbital teeth arising from the anterodorsal margin of the orbital hood; the well developed, dorsally flattened rostrum; the deep adrostral furrows, abruptly delimited from the rostrum; the subcylindrical major chela, without sculpture and with well developed adhesive plaques; the minor chela with acute distomesial tooth on the palm, and with rows of balaeniceps setae on the fingers in both sexes (more developed in males); the third pereopod with simple conical dactylus, unarmed merus, and ischium bearing ventrolateral spine; and the more or less dark-colored distolateral spine of the uropodal exopod. The two species also display a very characteristic color pattern, which consists of a dark brown-red background; a broad yellow mediodorsal band running from the tip of the rostrum to the telson; a narrow irregular white lon-