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Comments on two questionably new axiidean taxa from the Gulf of Mexico (Crustacea: Decapoda)

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Abstract

A recent descriptive account based on material in the Senckenberg Forschungsinstitut und Naturmuseum included descriptions of two new fossorial axiidean shrimp from the northeastern Gulf of Mexico. Both were based on fragmentary immature specimens, and the accompanying illustrations appeared to potentially represent known species. The types were obtained on loan for study in each of our labs. In one case we conclude that erroneous interpretations of a mangled immature specimen of *Axianassa arenaria* Kensley & Heard, 1990, led to its assignment to the wrong infraorder, and thus its erroneous description as a new genus and species. In the second case, misinterpretations of morphology of four fragmentary juvenile specimens led to assignment of a name for a population already known in literature to be separated genetically and developmentally from Atlantic populations of *Callichirus major* (Say, 1818) and Gulf of Mexico populations of *C. islagrande* (Schmitt, 1935). While no diagnostic characters of value were furnished with the description, we nonetheless conclude that the new name must be used.

Key words: Axianassidae, *Axianassa*, Callianassidae, *Callichirus*, Gulf of Mexico, taxonomy

Introduction

In a recent account of material housed in the Senckenberg Forschungsinstitut und Naturmuseum in Frankfurt am Main, Sakai & Türkay (2012) included descriptions of two new species from Gulf of Mexico waters, one ostensibly a new axiid burrowing shrimp (Axiidea: Axiidae) assigned to a new genus, the other a callianassid ghost shrimp (Axiidea: Callianassidae) assigned to *Callichirus* Stimpson, 1866. In the course of efforts to compile and verify records from the northern Gulf of Mexico region following the major regional BP Macondo oil spill, it was noticed by one of us (DLF) that this work did not compare the taxa to regionally relevant literature nor to extensive museum holdings of possibly similar species from the region. Both descriptions were based on fragmentary immature individuals, with accounts limited to specimens immediately at hand.

Here we reanalyze the two descriptions, based upon study of the authors' illustrations, re-examination of the type material, comparisons to existing specimens from near the type locality, and review relevant literature. We defer for now further evaluation of other taxa reported by Sakai & Türkay (2012).

Material and methods

Holotypes and other fragments of the species in question were obtained on loan from Senckenberg Forschungsinstitut und Naturmuseum in Frankfurt am Main (SMF), and examined by both authors by incident and transmitted light under dissection and transmission light microscopes, for the latter as temporary glycerine mounts. Digital photographs were taken with a motorized Nikon SMZ25 stereomicroscope, using NIS-Elements Microscope Imaging Software with an Extended Depth of Focus (EDF) patch. Comparative material was examined at the Smithsonian Institution National Museum of Natural History in Washington (USNM), University of