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A new species of the genus *Gammarus* (Crustacea: Amphipoda: Gammaridae) from the low salinity habitats in the northern Gulf of Mexico

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Abstract

In the northern Gulf of Mexico, *Gammarus mucronatus* sensu lato is represented by at least two forms, *G. mucronatus* sensu stricto and a less common "macromucronate" form, which appears to be restricted to low salinity habitats. These two forms have traditionally been separated using the size or angle of projection of the dorsal mucronations (processes). However, because of variability in the development of the processes, it is unclear whether this and other morphological differences between *G. mucronatus* sensu stricto and the "macromucronate" form are ecophenotypic or reflect distinct and separate species. Detailed morphological analyses indicate that these two forms represent distinct species; *Gammarus lecroyae*, new species, is described in detail and a key to the marine and estuarine *Gammarus* species from the northern Gulf of Mexico is provided.

Key words: Gulf of Mexico, *Gammarus*, Amphipoda, taxonomy

Introduction

The common estuarine amphipod *Gammarus mucronatus* Say, 1818, originally described based on material from Egg Harbor, New Jersey and material from near the mouth of the St. John's River, Florida (Say 1818), reportedly ranges from the Gulf of St. Lawrence through the northern Gulf of Mexico, reaching as far south as Laguna Alvarado, Mexico (LeCroy 2000). This species is euryhaline and is found in shallow bays, the upper portions of estuaries and salt marsh tide pools (Bousfield 1973; Heard 1982; LeCroy 2000). It is commonly associated with submerged aquatic vegetation (*Ruppia*, *Halodule*, *Syringodium*, and *Thalassia*), epiphytic algae and decaying wood as well as amongst hydroids and the submerged roots of marsh grasses (Barnard and Gray 1968; Farrell 1970; Thomas 1976; Heard 1982; LeCroy 2000). Throughout its range, it is an important contributor to the breakdown and recycling of organic material in salt marshes and submerged aquatic vegetation communities across a wide range of salinities (Heard 1982). Although specimens attributed to this species are highly variable, both in morphology and in habitat preference (Barnard and Gray 1968; Farrell 1970; Thomas 1976; Heard 1982; LeCroy 2000), little effort has gone into clarifying the taxonomic status of these variants. The lack of clarity in the taxonomic status of *G. mucronatus* sensu lato has led to a variety of names being found throughout the literature (Barnard and Gray 1968; Farrell 1970; Thomas 1976; Stoner 1979, 1980; Heard 1982; Mason 1998; LeCroy 2000), which only serves to diminish our understanding of the ecology of *G. mucronatus*.

For more than 30 years two superficially similar forms of the *G. mucronatus* species complex have been known from the northern Gulf of Mexico. These forms include the typical form of *G. mucronatus* sensu lato, referred to herein as *G. mucronatus*, which is know from the meso- and polyhaline waters of the east coast of North America and the Gulf of Mexico (Bousfield 1973, Heard 1982, LeCroy 2000), and the less common

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