



## Description and distribution of two new species of Paraonidae (Annelida: Polychaeta) from a lagoon-estuarine ecosystem in the Southern Gulf of Mexico

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### Abstract

The aim of this study was to analyze the taxonomy and distribution of the polychaetes of the family Paraonidae from a lagoon-estuarine ecosystem in the Gulf of Mexico. The samples come from 20 soft bottom stations in the Términos Lagoon during the dry and rainy seasons, of which eight included paraonids. In all, 1183 specimens belonging to two new species were identified: *Aricidea (Acmira) hirsuta* (1125 specimens) and *Paradoneis carmelitensis* (58 specimens). *A. (A.) hirsuta* is clearly distinguished from other members of the genus by the presence of unidentate curved spines with a dense pubescence along their medium and distal margins, and because the median antenna is short. *P. carmelitensis* is mainly characterized by the absence of eyes, by the presence of triangular shaped postchaetal prebranchial lobes, and the presence of branchiae and lyriform chaetae from chaetiger 4. The paraonids occurrence was mainly associated with salinities close to marine conditions (31.71 to 35.85 psu). They were almost totally collected during the rainy season (1178 specimens from both species) in the central and southern areas; during the dry season only five specimens of *P. carmelitensis* were recorded.

**Key words:** Paraonids, *Aricidea*, *Paradoneis*, Términos Lagoon

### Introduction

The polychaetes from the family Paraonidae are usually small, seldom exceeding 20 mm in length (Blake 1996), and they can have up to 200 segments (Strelzov 1973). Unlike many sedentary polychaetes, their prostomium is well developed, but lacks palps. Parapodia are biramous, with no aciculae and with dorsal branchiae from the third, fourth or fifth chaetiger (Strelzov 1973). A large variety of modified chaetae are found in this family; they constitute important diagnostic characters and include: lyriform chaetae, curved simple spines, and spines with various types of accessory sheaths, mucrons or bristles (Blake 1996). Virtually nothing is known about their reproduction and development (Strelzov 1968; Blake 1996).

The members of this family are usually marine, most often stenohaline (Strelzov 1973), and they are more abundant in bathyal and on the continental shelf areas than in shallow waters (Rouse & Pleijel 2001). They are part of the infauna, living in all kinds of soft sediments from sandy to clayey silt, but close to the surface (Rouse & Pleijel 2001). They are generally considered non-selective sedimentivores, although some species are selective deposit feeders (Fauchald & Jumars 1979; Gaston *et al.* 1992).

Around the world, few studies have been carried out on the systematics and ecology of this family, and this is also true for our study area, the southern Gulf of Mexico, even if the results of the existing studies have demonstrated that paraonids are well distributed in this marine region at all depths (Delgado-Blas 2001; Pérez-Mendoza *et al.* 2003). Taxonomically, Hartman (1957) and Strelzov (1973) undertook the most important revisions of this family, analyzing and summarizing all the information then available, in addition to describing and illustrating several species. Although some corrections have been proposed about those taxonomic arrangements, there are still the most solid bases for the identifications of the Paraonids on a worldwide basis. After them,