



Gnathia marleyi sp. nov. (Crustacea, Isopoda, Gnathiidae) from the Eastern Caribbean

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Abstract

A new species of gnathiid was collected in June–August 2008 and 2009 from various sites in the Eastern Caribbean. Third stage pranziae taken from fish hosts were maintained in fresh sea water until their moult into males or females. Distinctive features of the adult male cephalosome include a produced frontal border with conical superior fronto-lateral processes and a slightly sunken inferior conical medio-frontal process. The male mandible is 0.8 times the length of cephalosome with 10 to 11 processes on dentate blade. The adult female has a rectangular cephalosome with convex lateral margins, 1.2 times as wide as long with no paraocular ornamentation. The female frontal border is broadly rounded, produced and slightly concave anteriorly. The third stage pranzia is characterised by a mandible with 8 large, triangular teeth, directed backwardly and 2 small teeth at the tip.

Key words: Isopoda, Gnathiidae, *Gnathia*, Caribbean, morphology, free living adults, fish ectoparasitic juveniles

Introduction

Gnathiid isopods are unique protelian parasites of fish with only the juvenile life stages being parasitic, feeding on fish host blood, lymph or mucus, while the adults are free-living, non feeding, benthic organisms (Smit & Davies 2004). These marine isopods have a worldwide distribution and have been found from the Antarctic through to the Arctic, but mostly in warm, tropical areas where they have been reported, for example, as the most common ectoparasites of coral reef fishes on the Great Barrier Reef (GBR) (Grutter 1994). This seems to be true for the Caribbean as well as the GBR, with Kensley & Schotte (1989) listing 10 gnathiid species from the genus *Gnathia*, already described from various localities in the region. These 10 species are chronologically, *Gnathia triospathiona* Boone, 1918 (Florida, USA), *Gnathia johanna* Monod, 1926 (US Virgin Islands), and *Gnathia virginalis* Monod, 1926 (US Virgin Islands); *Gnathia puertoricensis* Menzies & Glynn, 1968 (Puerto Rico); *Gnathia beethoveni* Paul & Menzies, 1971 (Venezuela); *Gnathia rathi* Kensley, 1984 (Belize); *Gnathia gonzalezi* Müller, 1988 (Colombia); *Gnathia magdalenensis* Müller, 1988 (Belize); and *Gnathia samariensis* Müller, 1988 and *Gnathia velosa* Müller, 1988 (both from Colombia). As taxonomy of gnathiids is based solely on the morphology of the adult male it is not surprising that only two of the above mentioned species have morphological information for the adult females and juveniles. This lack of information for juvenile (larval) gnathiids has led to researchers working on cleaning behaviour among Caribbean coral reef fishes being unable to identify parasitic juveniles to species level when collected from the fish hosts.

As part of an ongoing study on the ecology of gnathiids on Caribbean coral reefs (Sikkel *et al.* 2006, 2009, 2011), larval specimens of these isopods were collected, kept alive and allowed to moult into adults for identification. The resultant adults did not conform to any of the 10 previously described species from the Caribbean or any other worldwide and is thus herein described as new to science.