



Notes on the Indo-West Pacific shrimp genus *Athanopsis* Coutière, 1897 (Crustacea, Decapoda, Alpheidae), with the description of a new species associated with echiurans (Annelida, Thalamsematidae)

ARTHUR ANKER

Laboratório de Zoobentos, Instituto de Ciências do Mar (Labomar), Universidade Federal do Ceará, Fortaleza, CE, Brazil.
E-mail: arthuranker7@yahoo.com

Abstract

The Indo-West Pacific alpheid shrimp genus *Athanopsis* Coutière, 1897 is briefly reviewed. *Athanopsis platyrhynchus* Coutière, 1897, the type species, is reassessed using Coutière's illustrations and morphological notes scattered throughout his monograph of the family Alpheidae (Coutière 1899). *Athanopsis brevirostris* Banner & Banner, 1981, originally described on the basis of a single immature specimen missing both chelipeds, is reported and illustrated based on fresh material from Madagascar and southern Japan. *Athanopsis gotoi* **sp. nov.** is described based on two fresh specimens from southern Japan, both found associated with thalassematid echiurans, and an additional, older museum specimen from Indonesia. The colour patterns of *A. brevirostris*, *A. gotoi* **sp. nov.**, *A. saurus* Anker, 2011, *A. rubricinctata* Berggren, 1991, and *A. australis* Banner & Banner, 1982, are contrasted to facilitate their identification in the field. A morphology and colour based key to all presently known species of *Athanopsis* is also provided.

Key words: Indo-West Pacific, Alpheidae, *Athanopsis*, spoon worm, Echiura, Thalamsematidae, Madagascar, Japan, new species

Introduction

Alpheid shrimps are well known for their associations with other marine organisms, such as sponges, corals, sea anemones, worms, mollusks, other crustaceans, echinoderms, and gobiid fishes (Bauer 2004). For instance, long and spacious galleries of larger burrowing crustaceans, e.g. ghost and mud shrimps (Decapoda: Callinassidae, Upogebiidae, Axianassidae) and mantis shrimps (Stomatopoda: Squillidae, Lysiosquillidae), or spoon worms (Echiura, now a suprafamilial taxon with polychaete affinities within Annelida; see Purschke *et al.* 2000; Struck *et al.* 2007, 2011; Lehrke & Bartolomaeus 2009), constitute both permanent shelters and canteens for a number of smaller alpheids (e.g., Hart 1964; Williams 1965; Berggren 1991; Froggia & Atkinson 1998; Dworschak & Coelho 1999; Hayashi 2002; Anker *et al.* 2001, 2005, 2006, 2007; Anker 2011a, 2011b). Among them are two members of the poorly known Indo-West Pacific genus *Athanopsis* Coutière, 1897, found symbiotically in burrows of thalassematid echiurans (Miya 1980; Berggren 1991; Anker *et al.* 2005).

The type species of *Athanopsis*, *A. platyrhynchus* Coutière, 1897, was described based on two specimens personally collected by H. Coutière in Djibouti. In his famous monograph of the family Alpheidae, Coutière (1899) provided detailed ecological notes on all his Djiboutian alpheid material. However, he did not record a symbiotic association of *A. platyrhynchus* with echiurans or any other marine invertebrates in Djibouti. Miya (1980) described the second species, *A. dentipes* Miya, 1980, based on several specimens from southern Japan, including one found together with the echiuran tentatively identified as "*Thalassema ?mucosa* Ikeda", now *Anelassorhynchus mucosus* (Ikeda, 1904) (Thalassematidae). Banner & Banner (1981) described the third species, *A. brevirostris* Banner & Banner, 1981, based on a single, immature, incomplete specimen that came from a poisoning station on a shallow coral reef in the Dahlak Archipelago, southern Red Sea. The same authors also described the fourth species, *A. australis* Banner & Banner, 1982, again based on a single and incomplete specimen collected on "sandy sediment" in Port Phillip Bay, southern Australia (Banner & Banner 1982). Miya (1984) reported, with