



Two new species of *Atlantocuma* (Crustacea: Cumacea), and a new genus and species from Japan, Northwest Pacific, with observations on the degeneration of mouthparts in ovigerous females

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Abstract

Two species of the cumacean genus *Atlantocuma* from the southern coast of Honshu, Japan, 781–861 m depth, *A. gamoi* **sp. nov.** and *A. ojii* **sp. nov.**, and *Pseudopicrocuma japonicum* **gen et sp. nov.** from Nansei Islands, 566–1769 m depth, are described. *Atlantocuma gamoi* is characterized by (1) carapace elevated in preparatory and ovigerous female, (2) antero-lateral angle of carapace with 3 teeth in females, and (3) pseudorostrum of carapace of adult males truncate, anterolateral angle without teeth. *Atlantocuma ojii* is characterized by (1) carapace not elevated in preparatory females, but elevated in ovigerous females, (2) inferior margin of carapace in ovigerous female serrated for entire length, (3) pseudorostrum of carapace in adult males truncate, (4) uropod exopod with 1–2 spiniform setae on inner margin, except for subterminal one. The new genus *Pseudopicrocuma*, which is similar to *Picrocuma* from shallow waters of eastern Australia, is characterized by (1) well-developed exopods present on maxilliped 3 and pereopods 1–3 in both sexes, (2) antenna 1 of adult males with many aesthetascs-like sensory setae on peduncle articles 2 and 3, (3) male antenna 2 of clasping form, and (4) uropod slender, peduncle shorter than rami. *Pseudopicrocuma* shows affinity to *Atlantocuma* except for (1) arrangement of well-developed exopods on pereopods, (2) male antenna 2 flagellum of clasping form, and (3) uropod peduncle shorter than rami. In addition, *P. japonicum* and the new Japanese *Atlantocuma* species are characterized by a similar trend in degeneration of mouthparts (mandibles – maxillipeds 2) in ovigerous females, suggesting a rather close relationship of these genera with quite different arrangements of exopods on pereopods. These 2 genera are currently placed in Nannastacidae. Other possible relatives of *Pseudopicrocuma* are *Spilocuma* (Bodotriidae) and *Claudicum* (Nannastacidae).

Key words: Crustacea, Cumacea, *Atlantocuma*, *Pseudopicrocuma*, new genus, new species, deep-sea, Northwest Pacific

Introduction

A few cumacean genera with pleotelsons are problematic in their family placement. One of these genera is *Atlantocuma*, consisting of 5 known species, from bathyal and abyssal waters of the Atlantic, Antarctic, the western Indian Ocean and the southeastern Pacific (Băcescu and Muradian 1974; Băcescu 1988, Jones 1984; Ledoyer 1988, 1993; Petrescu 1995; Mühlenhardt-Siegel 2005; Corbera 2006). This genus is characterized by (1) mandibles navicular, (2) pleopods absent in both sexes (3) well developed exopod present on maxilliped 3 and pereopods 1–4 in males, on maxilliped 3 and pereopod 1 in females. Băcescu and Muradian (1974) did not note anything with regard to the family placement of their newly established genus. Jones (1984) placed the genus in Nannastacidae with considerable doubt, noting that it could be an "aberrant member of Bodotriidae", based on overall appearance of the body and mouthparts. Băcescu (1988) placed *Atlantocuma* in Borotriidae (subfamily Bodotriinae), which was followed by Petrescu (1995) and Mühlenhardt-Siegel (2005). However, Ledoyer (1988, 1993) placed the genus in Nannastacidae. Haye (2007) also placed the genus outside of Bodotriidae in her phylogenetic analysis of the family, based on morphological characters.

Another genus with similar problems is *Picrocuma* Hale, 1936, from shores along the eastern coast of Australia. This genus is characterized by (1) pleopods absent in males and females, (2) well-developed exopods present on maxilliped 3 and pereopods 1–3 in both sexes, and (3) antenna 2 of adult males with short, clasping form of fla-