

Revision of *Bowmaniella* sensu Băcescu, 1968 (Crustacea: Mysida: Mysidae: Gastrosaccinae): a taxonomic conundrum

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Abstract

There is confusion regarding the taxonomy, systematics, and distribution of species within the burrowing mysid genus *Bowmaniella* Băcescu, 1968. We have critically reviewed and examined the subgenera and the 15 nominal species currently assigned to *Bowmaniella sensu* Băcescu. Type material of eight of the 15 nominal species was examined and *in vivo* observations were made on two nominal species of the ‘*dissimilis* group’. It was determined that in the ultimate (terminal form) and penultimate (subterminal form) males, the morphology of the third pleopods is distinctly different, a factor which has led to taxonomic confusion and the descriptions of several invalid species. Because Băcescu (1968) did not designate a type species for *Bowmaniella* or for the subgenus *Coifmanniella*, both taxa are *nomina nuda*. Our studies, especially those involving the development of the male third pleopod, also indicate that nine of the nominal species previously assigned to *Bowmaniella* Băcescu, 1968 are junior synonyms. We formally designate two new genera, *Bowmaniella n. g.* and *Coifmanniella n. g.*, to accommodate the species previously listed under *Bowmaniella* and its subgenera as perceived by Băcescu (1968). We retain the use of Băcescu’s original generic and subgeneric names, but with each having distinctly different diagnoses to those originally proposed by Băcescu. *Bowmaniella n. g.* is diagnosed to receive *B. dissimilis* (type species) and *B. banneri*. *Coifmanniella n. g.* contains four species, *C. johnsoni* (type species), *C. mexicana*, *C. merjonesi*, and *C. parageia*. Lectotypes are designated for *Bowmaniella dissimilis*, *B. banneri*, *Coifmanniella mexicana* and *C. merjonesi* and a neotype is designated for *C. johnsoni*. Illustrated keys are given for the seven “burrowing” genera presently assigned to the Gastrosaccinae and for the species currently assigned to the American genera *Bowmaniella* and *Coifmanniella*.

Key words: Mysida, Mysidae, Gastrosaccinae, *Bowmaniella*, *Coifmanniella*, revision, new genera, taxonomy

Introduction

Over the past 25 years, we have collected and examined numerous specimens of *Bowmaniella* Băcescu, 1968 representing 11 of 15 nominal species. The members of the genus *Bowmaniella* are burrowing species of moderate size (8–12 mm TL) with a distribution limited to the Atlantic and Pacific coasts of the Americas. Our observations are based on material from the Bahamas, Brazil, Caribbean, Gulf of Mexico, US eastern seaboard, and from the eastern Pacific coasts of California and Costa Rica. We also conducted *in vivo* studies on specimens within the ‘*dissimilis* group’ that were designed to determine what effect the development of male third pleopod might have on the taxonomy and systematics of the genus *Bowmaniella sensu* Băcescu (1968). The following taxonomic and systematic revision of the genus *Bowmaniella* is a result of these observations and our critical review of the literature.