



Morphological and morphometric comparisons of the first zoea of four species of purse crabs (Decapoda: Brachyura: Leucosiidae) from the Brazilian South Atlantic

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Abstract

Morphological descriptions of the first larval stages of *Persephona mediterranea*, *P. lichtensteinii* and *P. punctata* (Leucosiidae: Eballinae) from the South Atlantic are provided, with comparisons among the morphometry of the species. A detailed description and eight morphometric measurements were made for each larva, and a discriminant function analysis was used to interpret the data set. The species differed significantly in certain morphological and morphometric features. These characteristics may help in the identification of species of Leucosioidea found in the South Atlantic, and can be an important tool in ecological studies, supporting the identification of planktonic morphotypes at the species level.

Key words: *Persephona*; larval description, larval morphometry

Introduction

Members of the superfamily Leucosioidea Samouelle, 1819, are commonly known as purse crabs. These crabs live in subtidal marine environments, mainly inhabiting sandy bottoms of coastal regions, although some species can be found at depths up to 400 m (Melo 1996). The superfamily comprises two families: Iphiculidae Alcock, 1896, and Leucosiidae Samouelle, 1819, with three subfamilies, Cryptocneminae, Eballinae and Leucosiinae. Only the subfamily Eballinae (formed by grouping subfamilies Eballinae, Philyrinae, and Iliinae) (Ng *et al.* 2008) occurs throughout the Atlantic Ocean. *Persephona* Leach, 1817, is one of the most common genera of purse crabs in Brazil, with four species: *Persephona crinita* Rathbun, 1931; *P. lichtensteinii* Leach, 1817; *P. mediterranea* (Herbst, 1794); and *P. punctata* (Linnaeus, 1758) (Melo 1996).

Larvae of several leucosiid genera have been described as follows: three species of *Arcania* Leach, 1817: *A. septemspinosa* (Fabricius, 1793), by Sankolli (1961), *A. undecimspinosa* De Haan, 1841, by Terada (1979, 1984) and Quintana (1984, 1986a, 1986b), and *A. undecimspinosa elongata* Yokoya, 1933, by Terada (1984); six species of *Ebalia* Leach, 1817: *E. cranchii* Leach, 1817, by Lebour (1928, 1982), *E. nux* A. Milne Edwards, 1883, by Rice (1980b), *E. rotundata* A. Milne Edwards, 1880 (described as *Lithadia rotundata*) by Fransozo & Bertini (2002), *E. tuberosa* (Pennant, 1777), by Lebour (1928) and Salman (1982), *E. tumefacta* (Montagu, 1808), by Salman (1982), and an unidentified species by Aikawa (1929); one species each of *Iliia* Leach, 1817 and *Ixa* Leach, 1815: *Iliia nucleus* (L., 1758), by Heegaard (1963) and Bartilotti *et al.* (2009) and *I. cylindrus* (Fabricius, 1777), by RajaBai (1960); six species of *Leucosia* Bell, 1855: *L. anatum* (Herbst, 1783), by Terada (1984), *L. biannulata* Tyndale-Biscoe & George, 1962, by Ghory & Siddiqui (2008), *L. cranicolaris* (Herbst, 1783), by Quintana (1984, 1986a, 1986b), *L. longifrons* De Haan, 1841, by Terada (1979), *L. obtusifrons* De Haan, 1841, by Terada (1984), and *L.*