



<http://dx.doi.org/10.11646/zootaxa.3973.3.5>

<http://zoobank.org/urn:lsid:zoobank.org:pub:68BD37F4-73E2-411B-BA8A-8FD34EC4480E>

Description of the newly-hatched juvenile of *Aegla perobae* (Crustacea: Decapoda: Aeglidae)

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Abstract

The present paper contains the complete description of the external morphology of the first juvenile stage of *Aegla perobae* analysed through light microscopy (LM) and scanning electron microscopy (SEM). Newly-hatched juveniles were obtained from ovigerous females kept under laboratory conditions. Hatching is asynchronous, taking 2–4 days for all juveniles of a single brood to hatch. Average carapace dimensions are 1.54 mm wide and 1.69 mm long (rostrum excluded). Morphology of the carapace, of the cephalothoracic appendages (antennule, antenna, mandible, maxillule, maxilla, maxillipeds, and pereopods), of the pleon, and of the tail fan (telson plus uropods) are described in detail. *Aegla perobae* juveniles can be readily differentiate from the first juveniles of other aeglids species described so far by the upwardly curved condition of the distal region of the rostrum and the distinct groove along the orbital sinus produced the elevated free in this area. Pleopods 2–5 are present as rudimentary digitiform buds. Rudimentary pleopods are still present in adult males of the species, a trait not yet described in freshwater aeglids. This curious condition is compared and discussed in the light of the current knowledge of early postembryonic developmental patterns found in other anomurans.

Key words: Anomura, external morphology, direct development, pleopods, SEM

Introduction

The marine origin of the family Aeglidae Dana 1852, probably in the Indo-Pacific region, is supported by evidence from fossil material attributed to the extinct genera *Haumuriaegla* and *Protaegla* (Feldmann 1984; Feldmann *et al.* 1998). The only extant genus, *Aegla* Leach 1820, is unique because it is entirely adapted to freshwater habitats and is endemic to temperate and subtropical regions of continental South America (Schmitt 1942; Bond-Buckup *et al.* 2008). Pérez-Losada *et al.* (2004) demonstrated that the colonization of freshwater by aeglids, and the point of origin of *Aegla*, probably took place along the Pacific coast of South America as a consequence of several marine transgressions that covered vast low lying areas of western South America periodically during the Late Cretaceous–Early Tertiary Period (about 90–60 mya).

Aegla is also remarkable in that it is the only confirmed anomuran taxon with direct postembryonic development, characterized by the complete suppression of free-swimming larval stages (Rabalais & Gore 1985), although rudimentary larval traits can be recognized during embryonic development within the egg (Lizardo-Daudt & Bond-Buckup 2003). The hatching form is an epibenthic juvenile that very much resembles the adult in general morphology (Francisco *et al.* 2007; Moraes & Bueno 2013).

Newly-hatched juveniles remain under maternal care in the brooding chamber formed by flexure of the pleon of the female for a few days before leaving their mother and starting to explore the surroundings (Bahamonde & López 1961; Rodrigues & Hebling 1978; Bueno & Bond-Buckup 1996; Bond-Buckup *et al.* 1999; López-Greco *et al.* 2004; Francisco *et al.* 2007). Young juveniles avoid being carried away by the water current by hiding under rocks and pebbles or in shallow areas with low water flow velocity (López 1965). Due to their limited capacity for dispersal, the recruits tend to remain near the parental population (Bueno *et al.* 2014).

Seventy-five species of *Aegla* have been described so far, and complete descriptions and illustrations of newly-