

The post-embryonic developments of *Pseudodiaptomus koreanus* Soh and Suh(Copepoda, Calanoida)

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Introduction

The genus of *Pseudodiaptomus* Herrick, 1884 presently comprises 74 species worldwide extending freshwater to hypersaline water(Walter, 2002). Of these, the post-embryonic developments of their naupliar and copepodid stages have been reported in only eight species: *P. euryhalinus*, *P. cornatus*, *P. richardi inequalis*, *P. marinus*, *P. binghami*, *P. poplesia*, *P. aurivilli* and *P. hessei*. Recent studies have showed that their post-embryonic developmental pattern are a very useful tool to postulate their phylogenetic relationships.

Pseudodiaptomus koreanus is widely distributed in estuaries in southern and eastern Korea. In particular, in the Seomjin River estuary it attains high population densities(Park et al., 2002). This study aims to describe the naupliar and copepodid stages of *P. koreanus*.

Materials and methods

The post-embryonic developmental stages(NI to CVI) of *P. koreanus* were captured by a norpac net(naupliar stages; mash size 50 μ m, copepodid stages; mash size 200 μ m) from the Seomjin River estuary, southern Korea in February and June 2002. Developmental stages were first identified from the sample collected in the study area. Different appendages of each developmental stages were dissected and mounted on permanent slides in lactophenol medium. Bodies and appendages were observed with a differential interference contrast microscope(Olympus CX40) equipped with a drawing tube. The morphological terminology and segmental homology of antennules are based on Huy and Boxshall(1991) and Boxshall and Huys(1998).

Results

The post-embryonic developmental stages of *P. koreanus* Soh & Suh are described and illustrated using specimens reared in the laboratory and those collected in situ. Its external morphology is compared with that of all presently known pseudodiaptomid nauplii and copepodids to provide useful taxonomic characteristics to trace their phylogenetic relationships. Different from being reported for most other pseudodiaptomids except for *P. marinus* and *P. poplesia* (Uye and Onbé, 1975; Li and Fang, 1990), *P. koreanus* has evidently six post-embryonic naupliar and five copepodid stages (excluding adults). Limb segmentation of appendages was nearly identical between pseudodiaptomid species throughout the whole development, while setation patterns were variable as suppressed or delayed to the development of species.

References

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