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Description of *Conchyliliurus dispar* n. sp. (Copepoda, Cyclopoida, Clausidiidae) associated with the bivalve *Barnea manilensis* (Philippi) from the Yellow Sea with a discussion of the male morphotypes in the genus

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Abstract

Conchyliliurus dispar, a new species associated with the bivalve *Barnea manilensis* (Philippi), is described from the intertidal zone of the Yellow Sea. The new species is distinguished from its congeners by a combination of the following characters: the absence of posterolateral processes on the male genital somite, the absence of a dorsal lobe on the female genital double-somite, and the presence of proximal spinules on the ventral surface of the anal somite. Based on a review of the literature on *Conchyliliurus*, we also argue that the male of the new species and possibly all other known species of *Conchyliliurus* consist of two distinct morphotypes, a large male and a small male.

Key words: Crustacea, new species, association, Bivalvia, Korea

Introduction

Symbiotic copepods are frequently associated with bivalves (Humes 1994). Species of the genus *Conchyliliurus* Bocquet & Stock, 1957, however, are exclusive associates of marine bivalves living in intertidal and shallow coastal waters. They have a narrow body and their adult females typically carry two pairs of spermatophores firmly attached to the genital double-somite. Although 11 species of this genus are listed (Walter & Boxshall 2013), *C. fragilis* Reddiah, 1961 was synonymized with *C. bombasticus* Reddiah, 1961 by Ho & Kim (1995) and *C. bhimilensis* Lalitha Devi & Bhavanarayana, 1976 from India was poorly described (Lalitha Devi & Bhavanarayana 1976) and may be regarded as a species inquirenda. The remaining nine species have been recorded from Western Europe, West Africa, the Indian Ocean, and Far East waters. In the Far East, three species of the genus, *C. quintus* Tanaka, 1961, *C. inchonensis* Kim, 1997, and *C. mactrae* Avdeev, 1977 have been described (Tanaka 1961; Kim 1997; Avdeev 1977). Of these, *C. quintus* has been found associated with 12 species of bivalves in Korea (Kim 2004) and is thus the most commonly occurring species.

Samples of copepods collected from the bivalve *Barnea manilensis* (Philippi) dwelling in the intertidal zone of the Yellow Sea were examined. Initially, these copepods were thought to be *C. quintus*, but careful observations revealed that the male of this species is devoid of posterolateral processes on the genital somite, unlike that of *C. quintus*. Further examination of the specimens indicated that they represented an unknown species and they are described herein as a new species.

Material and methods

The copepods studied were collected from the bivalve *B. manilensis* living in the intertidal zone of the Yellow Sea of Korea. The bivalve hosts were dug out with a shovel and fixed in 80% ethanol. Back in the laboratory, the shells of the hosts were opened and their soft parts were rinsed in fresh water in order to dislodge any associated copepods. The isolated copepod specimens were preserved in 80% ethanol. Ethanol-preserved samples of *C.*

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