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Heptacarpus littoralis Butler a synonym of *Heptacarpus sitchensis* (Brandt) (Crustacea: Decapoda: Hippolytidae)

LIA STAMATIOU & GREGORY C. JENSEN

School of Aquatic and Fishery Sciences, Box 355020, University of Washington, Seattle, Washington 98195, USA; (LS): liastam@u.washington.edu; (GCJ): gjensen@u.washington.edu

Abstract

Heptacarpus littoralis was differentiated from *H. sitchensis* based on several characters, including absence of a pterygostomian spine (present in *H. sitchensis*); distinctly curved propodi of pereopods III-V, and a smaller and more slender body than *H. sitchensis*. To test whether these differences represent separate species or merely sexual dimorphism within a single species, we collected ovigerous *H. sitchensis* and raised their larvae to determine if both morphologies would occur within the same progeny. By one year of age many of the shrimp had reached sexual maturity; pterygostomian spines were present on all females but only 27% of the males. Males were also smaller on average than females, and developed the curved propodi and other features characteristic of *H. littoralis*. Hence, *H. littoralis* is considered a male form of *H. sitchensis* and a junior synonym.

Key words: *Heptacarpus sitchensis*, *Heptacarpus littoralis*, Hippolytidae, shrimp, Northeastern Pacific, experimental taxonomy

Introduction

The family Hippolytidae encompasses a diverse assemblage of carideans common in the waters of the eastern Pacific Ocean (Wicksten 1990). Within the family, members of the genus *Heptacarpus* Holmes are small to medium-sized shrimp largely restricted to the North Pacific Ocean, where their habitat ranges from the nearshore zone to the continental shelf (Butler 1980).

When sampling in southeastern Alaska, Squires and Figueira (1974) noted an undescribed hippolytid "very close to *Heptacarpus sitchensis*" but lacking a pterygostomian spine. This form was subsequently described as a new species, *H. littoralis*, by Butler (1980), who noted that it also differed from *H. sitchensis* (Brandt) in having a smaller, more slender build, proportionately larger eyes and narrower antennal scale, and having

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