

Description of *Tisbe alaskensis* sp. nov. (Crustacea: Copepoda) Combining Structural and Molecular Traits

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Supawadee Chullasorn, Hans-Uwe Dahms, Kyun-Woo Lee, Jang-Seu Ki, Nikolaos Schizas, Pawana Kangtia, Heum Gi Park, and Jae-Seong Lee (2011) Description of *Tisbe alaskensis* sp. nov. (Crustacea: Copepoda) combining structural and molecular information. *Zoological Studies* 50(1): 103-117. The purpose of this paper is to provide a species description of *Tisbe alaskensis* sp. nov. that combines a visual description with molecular identification that allows a meaningful characterization. Morphological details of this species are described from laboratory stocks raised from individuals collected in the harbor at Juneau, Alaska. The description revealed the following morphological autapomorphic characters: the spiniform outer seta of P1 endopod-3 bears short but stiff spinules along the outer border and an oblique spinule row at the outer corner; the middle spiniform seta carries a tuft of spinules at the outer tip; and there are some spinules scattered on the anterior surface of the female P5 exopod, but no ornamentation on the male P5 exopod. In addition, we determined the 18S ribosomal DNA sequence of *T. alaskensis* sp. nov. and compared it against publicly available sequences. <http://zoolstud.sinica.edu.tw/Journals/50.1/103.pdf>

Key words: Species description, Phylogenetic systematics, 18S rDNA, External morphology, Tisbidae.

Describing a new taxon such as a new species is a challenging issue for biologists. The classical use of morphological traits for species identification has several limitations. The importance of any particular morphological trait reflects the judgement of the taxonomist. Phenotypic variations of 1 or more traits under study may result in 2 or more names applied to the same taxon (Dodson and Lee 2006), or a group of morphological traits might not vary between 2 or more species that can be recognized by other

attributes (Lee and Frost 2002, Ki et al. 2009). Moreover, taxonomically important morphological traits are often expressed only in a particular life stage or gender, as for example in the Copepoda, where species identification is mainly based on adult appendages (Ferrari and Dahms 2007). Thus, a high level of expertise is often required to correctly identify species with the accuracy required in a wide array of studies. Morphological criteria for diagnosing species vary from genus to genus; similarly, there is no consensus as to how much

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