



## A new genus and two new species of alvinocaridid shrimps (Crustacea: Decapoda: Caridea) from a hydrothermal vent field off northeastern Taiwan\*

TOMOYUKI KOMAI<sup>1</sup> & TIN-YAM CHAN<sup>2</sup>

<sup>1</sup>Natural History Museum and Institute, Chiba, 955-2 Aoba-cho, Chuo-ku, 260-8682 Japan. E-mail: komai@chiba-muse.or.jp

<sup>2</sup>Institute of Marine Biology, National Taiwan Ocean University, Keelung, Taiwan, R.O.C. E-mail: tychan@mail.ntou.edu.tw (corresponding author)

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### Abstract

Two new species of alvinocaridid shrimps are described from a hydrothermal vent field off northeastern Taiwan at depths of 252–300 m. *Alvinocaris chelys* n. sp. is morphologically very similar to *A. williamsi* Shank & Martin, 2003 from the Mid-Atlantic Ridge, and *A. alexander* Ah Yong, 2009 from the southern Kermadec Ridge. These three species can be differentiated by the shape of the postrostral ridge, telson, the second segment of the antennular peduncle and the armature of the meri and ischia of the third pereopod. The second new species, although rather similar to *Alvinocaris niwa* Webber, 2004 from the Kermadec-Arc, is assigned to a new genus *Alvinocaridinides* gen. nov., which appears to be intermediate between *Shinkaicaris* Komai & Segonzac, 2005 and other derived genera including *Opaepele* Williams & Dobbs, 1995, *Chorocaris* Martin & Hessler, 1990 and *Rimicaris* Williams & Rona, 1986. *Alvinocaridinides formosa* n. sp. differs from *Alvinocaris niwa* by completely lacking any armature on the ischia of the third to fifth pereopods and by bearing two movable spines at the posterolateral angle of the uropodal exopod. These records constitute the first discovery of the family Alvinocarididae in Taiwanese waters and represent the shallowest occurrence for alvinocaridid shrimps.

**Key words:** Crustacea, Decapoda, Caridea, Alvinocarididae, *Alvinocaris*, new species, new genus, *Alvinocaridinides*, Taiwan, hydrothermal vents

### Introduction

The caridean family Alvinocarididae is currently represented by 21 species in seven genera. All of them inhabit reducing environments in deep waters from 534 to 4088 m, i.e. hydrothermal vents or brine and hydrocarbon seeps (Martin & Haney 2005; Komai & Segonzac 2005, 2008; Komai *et al.* 2005, 2006, 2007; Ah Yong 2009). Although this family is widespread across the globe, the geographical range of individual species is generally rather restricted. The genus *Alvinocaris* Williams & Chace, 1982 is most speciose and represented by 11 known species (Komai & Segonzac 2005; Komai *et al.* 2005; Ah Yong 2009); interestingly there has been no record yet of this genus from the Indian Ocean. Komai & Segonzac (2005) suggested the possible monophyly of *Alvinocaris*, as species of the genus have a small spiniform tubercle on the anterior surface of the eyes, an unusual character for Caridea. However, in a note added in the manuscript proof they argued that *Alvinocaris niwa* Webber, 2004 might not be a member of *Alvinocaris* *sensu stricto* because it shares possible synapomorphies with other genera, such as *Shinkaicaris* Komai & Segonzac, 2005; *Opaepele* Williams & Dobbs, 1995; *Chorocaris* Martin & Hessler, 1990 and *Rimicaris* Williams & Rona, 1986. Shank *et al.* (1999) used the mitochondrial Cytochrome Oxidase subunit I gene (COI) to study the phylogenetic relationships among 11 alvinocaridid taxa, but more comprehensive studies will be needed to fully understand the phylogeny within this family.