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Galatheid and chirostyliid crustaceans (Decapoda: Anomura) from a cold seep environment in the northeastern South China Sea

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Abstract

Six species of squat lobsters from a cold seep field in the northeastern South China Sea are studied. Two new species, *Uroptychus jiaolongae* n. sp. and *U. spinulosus* n. sp., are described, and their distinctions from the related species are detailed. Two species, *Munidopsis tuberosa* Osawa, Lin & Chan, 2008 and *M. verrilli* Benedict, 1902, are herein reported for the first time from a cold seep/hydrothermal vent environment. The number of squat lobster species associated with those chemosynthetic environments now stands at forty-one.

Key words: squat lobster, *Munidopsis*, *Shinkaia*, *Uroptychus*, new species

Introduction

The squat lobsters are one of the most diverse groups of deep sea animals, and are prevalent in both hydrothermal vent and cold seep environment. To our knowledge, forty-one species have been reported as colonists or vagrants in these chemosynthetic ecosystems, twenty of which were newly recorded after Martin & Haney's review (Martin & Haney 2005; Macpherson & Segonzac 2005; Macpherson *et al.* 2005; Cubelio *et al.* 2007a–c, 2008; Macpherson 2007; Jones & Macpherson 2007; Thurber *et al.* 2011; Liu *et al.* 2013; Ah Yong & Roterman 2014; Thatje *et al.* 2015). Among them, six species are from the western Pacific: *Munidopsis gracilis* Cubelio, Tsuchida & Watanabe, 2008, *M. kermadec* Cubelio, Tsuchida & Watanabe, 2007, *M. longispinosa* Cubelio, Tsuchida & Watanabe, 2007, *M. myojinensis* Cubelio, Tsuchida, Hendrickx, Kado & Watanabe, 2007, *M. naginata* Cubelio, Tsuchida & Watanabe, 2007 and *M. ryukyuensis* Cubelio, Tsuchida & Watanabe, 2007 (*M. naginata* is from both hydrothermal vents in the Okinawa Trough and cold seeps off Sagami Bay; Cubelio *et al.* 2007a–c, 2008); five species are from the eastern Pacific: *Kiwa hirsuta* Macpherson, Jones & Segonzac, 2005, *K. puravida* Thurber, Jones & Schnabel, 2011, *M. bracteosa* Jones & Macpherson, 2007, *M. recta* Baba, 2005 and *M. scotti* Jones & Macpherson, 2007; seven species are from the Atlantic Ocean: *M. acutispina* Benedict, 1902, *M. exuta* Macpherson & Segonzac 2005, *M. geyeri* Pequegnat & Pequegnat, 1970, *M. hirtella* Macpherson & Segonzac 2005, *M. livida* (Perrier, 1886), *M. marionis* (A. Milne-Edwards, 1882) and *K. tyleri* Thatje, Marsh, Roterman, Mavrogordato & Linse, 2015 (*M. acutispina* are from both the central Atlantic Ocean vent field and the Kazan mud volcano cold seep field in the eastern Mediterranean Sea; Macpherson & Segonzac 2005); two species are from the Indian Ocean: *M. laticarpus* Cubelio, Tsuchida & Watanabe, 2008 and *Munida manqingae* Liu, Lin & Huang, 2013 (Cubelio *et al.* 2008; Liu *et al.* 2013). Another two species have been collected in the vicinity of hydrothermal vents: *Munidopsis maunga* Schnabel & Bruce, 2006 (within the caldera of Macauley volcano in the Kermadec volcanic arc; Schnabel & Bruce 2006), and *M. vrijenhoeki* Jones & Macpherson, 2007 (from White Lady locality, Fiji basin; Jones & Macpherson 2007). However, the authors did not confirm whether these two species were found in communities directly related to vent environments. Therefore, we did not consider them vent/seep associated species in this study.

A cold seep field, which is located between the continental shelf and slope in the northeastern South China Sea (Fig. 1), was recently investigated with several squat lobsters being reported (Baba *et al.* 2009, Lin *et al.* 2013).