



Two new species of sand-bubbler crabs, *Scopimera*, from North China and the Philippines (Crustacea: Decapoda: Dotillidae)

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Abstract

Two undescribed species of *Scopimera* are herein described. *Scopimera sheni* **sp. nov.** from Qingdao, represents the fourth species of the genus to be recognized from North China. *Scopimera philippinensis* **sp. nov.** is the first record of the genus from the Philippines. Morphologically both new species belong to the “normal form” *Scopimera* (*sensu* Kemp 1919). Amongst other characters, each can be distinguished by its diagnostic male first gonopod. Mitochondrial cytochrome oxidase I (COI) gene sequences showed two distinct clades. An East Asia group (Chinese coasts, Japan, Korea and Taiwan) consisting of *S. globosa* De Haan, 1835, *S. ryukyuensis* Wong, Chan et Shih, 2010, *S. sheni* **sp. nov.**, *S. longidactyla* Shen, 1932 and *S. curtelsona* (= *S. cutelsoma*) Shen, 1936; and a Southeast Asia group consisting of the closely related *S. philippinensis* **sp. nov.** and *S. intermedia* Balss, 1934. A dichotomous key is provided for all “normal forms” of *Scopimera* species.

Key words: Brachyura, Dotillidae, *Scopimera*, taxonomy, new species, mitochondrial cytochrome oxidase I gene, COI

Introduction

Sand bubbler crabs of the genus *Scopimera* De Haan, 1833, are common and widespread on soft shores in the Indo-West Pacific region (Kemp 1919; Miyake 1983). Ecologically they play an important role as deposit feeders and bioturbators, and have been shown to affect the productivity of sandy shores (e.g., *S. globosa* De Haan, 1835: Yamaguchi & Takana 1974; *S. crabricauda* Alcock, 1900: Clayton & Al-Kindi 1998). At present there are 14 species in the genus (see Ng *et al.* 2008; Wong *et al.* 2010).

De Haan (1833) established *Scopimera* as a subgenus of *Ocypode* based on the Japanese specimens obtained by von Siebold, although the type species *Ocypode (Scopimera) globosa* De Haan, 1835 was only officially described two years later (see Yamaguchi & Baba 1993). Seven species have been recorded from the Northwest Pacific and Southeast Asia regions: *S. sigillorum* Rathbun, 1914, *S. bitympa* Shen, 1930, *S. longidactyla* Shen, 1932, *S. intermedia* Balss, 1934, *S. curtelsona* Shen, 1936 (= “*S. cutelsoma*”, see Remarks under *S. philippinensis* **sp. nov.**), *S. gordonae* Serène & Moosa, 1981 and *S. ryukyuensis* Wong, Chan et Shih, 2010, (see also Kemp 1919; Serène 1968; Serène & Moosa 1981; Dai & Yang 1991; Ng & Davie 2002; Ng *et al.* 2008; Wong *et al.* 2010). Kemp (1919, p. 311) considered the genus to consist of four morphological groups, with his “normal form” characterized by: 1) the external maxilliped merus no larger than the ischium; and 2) the inner surface of the cheliped and ambulatory meri each possessing a single, entire tympanum. This “normal form” group, includes *S. globosa*, *S. pilula* Kemp, 1919, *S. longidactyla*, *S. intermedia*, *S. curtelsona* and *S. ryukyuensis*, and is largely endemic to the East and Southeast Asian regions, except for *S. pilula* which is found around the Gulf of Bengal and Phuket, Thailand (Kemp 1919; Ng & Davie 2002).

Here we describe two new “normal form” *Scopimera* species, one from Qingdao, Shandong Province, China, and the other from Panay Island (I.), the Philippines (the latter was first found in the collections of the National Museum of Nature and Science, Tokyo (NSMT)). In addition to their distinctive morphological characters, their mitochondrial cytochrome oxidase I (COI) sequences also show clear differences with congeners. A new dichotomous key is also provided to help identify all species in the “normal form” group.