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The ghost crab *Ocypode mortoni* George, 1982 (Crustacea: Decapoda: Ocypodidae): redescription, distribution at its type locality, and the phylogeny of East Asian *Ocypode* species

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Abstract

The ghost crab *Ocypode mortoni* George, 1982 was first described from the sandy shores of Sai Wan, Hong Kong, and although also identified from South China and Japan, has not been subsequently recorded in Hong Kong. The taxonomic status of *O. mortoni* is not clear as its original morphological description was not detailed, and there remains no information on its vertical and horizontal ecological distribution in Hong Kong. In the present study, *O. mortoni* was found to be locally rare in Hong Kong, only present at three of seven surveyed sites. It was always sympatric with the common *O. ceratophthalmus* (Pallas, 1772) at the same tidal level, and there appeared to be no clear habitat/niche distinction. Relative abundance of *O. mortoni* vs. *O. ceratophthalmus* was at most 31%: 69% based on quantitative transect survey data from Sai Wan. Molecular phylogenetic analyses on 24 haplotypes (from 28 individuals) of 636-basepair (bp) mitochondrial cytochrome oxidase I (COI) gene of *Ocypode* spp. in East Asia show *O. mortoni* is a valid species most closely related to *O. stimpsoni* Ortmann, 1897, with an average difference of 37.64 bp, and nucleotide divergence of 6.25%. The two species are very similar morphologically, but adults of *O. mortoni* develop ocular stylets.

Key words: ghost crab, *Ocypode mortoni*, redescription, East Asia, Hong Kong

Introduction

Ocypode species, more commonly known as “ghost crabs”, are found along sandy shores within the tropics and subtropics (Dahl 1953; Barass 1963). They are typically predators (Hughes 1966; Smith 1975), scavengers (Wolcott 1978), and/or deposit feeders (Tweedie 1950; Robertson & William 1981) and play an important role in the ecology of sandy beaches.

At present, there are at least 26 recognized *Ocypode* species (reviewed by Ng *et al.* 2008). In East Asia (including China, Taiwan, Japan and Korea) at least 5 species of *Ocypode* have been reported, viz. *O. ceratophthalmus* (Pallas, 1772), *O. cordimanus* Latreille, 1818, *O. mortoni* George, 1982, *O. sinensis* Dai, Song & Yang, 1985, and *O. stimpsoni* Ortmann, 1897. *Ocypode ceratophthalmus*, *O. cordimanus* and *O. sinensis* are widespread species in the Indo-Pacific region; while *O. stimpsoni* has a narrower distribution, being recorded from Japan, Korea, China and Taiwan (see Tweedie 1937; Barnard 1950; Crosnier 1965; George & Knott 1965; T. Sakai 1976; Dai & Yang 1991; Huang *et al.* 1998). *Ocypode mortoni* was first described from Hong Kong (George 1982) and has been reported from Guangdong, Guangxi and Hainan in China (Dai *et al.* 1985 [as *O. macrocera* H. Milne Edwards, 1837]; Dai & Yang 1991) and the Pacific coast of Shikoku, Japan (K. Sakai 2000).

Ocypode mortoni can be diagnosed as “with a short ocular stylet in the adult condition, stridulating ridge on the major manus composed of up to 54 closely spaced striae” (George 1982). George (1982) further mentioned that *O. mortoni* morphologically resembles *O. nobilii* De Man, 1902 from Borneo, and *O. fabricii* H. Milne Edwards, 1837 from northern Australia, yet differs in the number of striae on the stridulating ridge. *O. stimpsoni* has also been believed to be morphologically closely related, except for the presence of the ocular stylets in *O. mortoni* (Dai *et al.*