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A new species of *Fizesereneia* Takeda & Tamura, 1980 (Crustacea: Brachyura: Cryptochiridae) from the Red Sea and Oman

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Abstract

A new species of cryptochirid crab, *Fizesereneia panda* van der Meij, is described and illustrated based on specimens collected from the scleractinian corals *Lobophyllia* cf. *hemprichii* and *L.* cf. *corymbosa* from the Farasan Banks, Farasan Islands, and the reefs off Thuwal in the Saudi Arabian Red Sea, and from *Symphyllia recta* from reefs in the Gulf of Oman. This is the second cryptochirid species with the Red Sea as type locality. It can be separated from its congeners by the subrectangular carapace, raised midline and the complete division of the carapace depressions, and reddish black colour pattern of these concavities in live specimens. This new species is the seventh assigned to *Fizesereneia*. A DNA barcode for the new species has been deposited in GenBank.

Key words: DNA barcoding, gall crabs, host specificity, Lobophylliidae, Saudi Arabia, Scleractinia, taxonomy

Introduction

Gall crabs (Cryptochiridae) occur on coral reefs worldwide. Cryptochirids are mostly found in tropical reef corals, but several species have been described from deep water corals (e.g., Kropp & Manning 1996). Most gall crabs have been described from rather few areas where gall crab specialists worked (Guam, Japan, Vietnam), although they have been reported from most regions in the world, including the Pacific coast of Mexico (Hernández *et al.* 2013), Saint Helena in the Atlantic Ocean (den Hartog 1989), and northern Borneo (van der Meij & Hoeksema 2013). Yet, most reefs have not been sampled for gall crabs, resulting in patchy known distribution ranges for most species (Kropp 1990a).

To date, only one gall crab species has been described from the Red Sea: *Cryptochirus coralliodytes* Heller, 1861. Simon-Blecher & Achituv (1997) reported *C. coralliodytes* from the Gulf of Eilat inhabiting the former faviid genera *Favia* Milne Edwards, 1857 [= *Dipsastrea* Blainville, 1830], *Favites* Link, 1807, *Goniastrea* Milne Edwards & Haime, 1848, and *Platygyra* Ehrenberg, 1834. Based on the host specificity of gall crabs, however, it is likely that some of these host corals were inhabited by other gall crab species (Kropp 1990a, van der Meij unpublished data). Two additional cryptochirid species have been recorded from the Gulf of Eilat: *Hapalocarcinus marsupialis* Stimpson, 1859, from *Stylophora pistillata* Esper, 1797 (Abelson *et al.* 1991) and *Fungicola fagei* (Fize & Serène, 1956), from *Pleuractis granulosa* (Klunzinger, 1879) (Kramarsky-Winter *et al.* 1995). The latter record, based on the host coral, should possibly be attributed to *F. syzygia* van der Meij, 2015. The only two species recorded to date from Saudi Arabia are *H. marsupialis*, which was recorded from Lidh [= Al Lith] and Djedda [= Jeddah] (Balls 1924), and *Neotroglocarcinus dawydoffi* (Fize & Serène, 1956) (van der Meij & Reijnen 2014). Outside of the Gulf of Eilat, the Red Sea is a relatively understudied coral reef ecosystem, and non-coral invertebrates are particularly underrepresented in recent coral reef literature from the Red Sea (Berumen *et al.* 2013).

During a biodiversity research cruise in the Saudi Arabian part of the Red Sea, gall crabs were collected from a

synonymous. They did not document the lobophyllid genus *Symphyllia* in the Red Sea. Sheppard & Sheppard (1991) discussed *Symphyllia erythraea* (Klunzinger, 1879), *S. radians* (Milne Edwards & Haime, 1849), and *Lobophyllia corymbosa* and *L. hemprichii* in the Red Sea. *Symphyllia erythraea* and *S. radians* are fully meandroid and not easy to confuse with *Lobophyllia*. Arrigoni *et al.* (2012) found *L. hemprichii*, *L. corymbosa* and *S. radians* to be genetically very closely related, while *S. erythraea* is distinct and basal to the *Symphyllia-Lobophyllia* clade.

Host specificity of *Fizesereneia* species appears to be less strict than that of species of some other gall crab genera, but this is possibly influenced by difficulties in host coral identification. So far, only *Fizesereneia daidai* and *F. stimpsoni* show strict host associations, respectively with the genera *Micromussa* and *Acanthastrea* (Fize & Serène 1957; Zayasu *et al.* 2013).

Distribution. Currently known from the Farasan Banks and Islands and the reefs off Thuwal in the Saudi Arabian part of the Red Sea (Fig. 1) and from off Bandar Al-Khayran in the Gulf of Oman. This is the first record of *Fizesereneia* from this area, a genus heretofore recorded from Vietnam, Indonesia, Japan, Australia, and Micronesia (Kropp 1990a).

Etymology. This species is named *panda* owing to the dark colour pattern of its anterior carapace concavities, which resemble the dark spots around the eyes of the giant panda *Ailuropoda melanoleuca* (David, 1869) (Mammalia, Ursidae).

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