

First record of the Harlequin crab *Lissocarcinus orbicularis*, an obligate symbiont of sea cucumbers, from the Red Sea.

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Introduction

The Harlequin crab, *Lissocarcinus orbicularis* Dana, 1852, is one of the most common echinoderm symbionts in the Indo West-Pacific (IWP). It is typically found as a single individual or heterosexual pair on sea cucumbers of the genera *Stichopus*, *Thelenota*, *Actinopyga*, *Bohadschia*, and *Holothuria*, where it feeds on host integument and detritus (Ng & Jeng 1999; Caulier *et al.* 2012, 2014). These crabs have a striking color pattern of white spots on a dark red-brown background, or dark spots on white, that often complements their hosts (Caulier *et al.* 2012).

Lissocarcinus orbicularis has been reported across the IWP from Africa to Hawaii and French Polynesia (Vannini & Innocenti 2000). It has been listed from the Red Sea but without reference to specific specimens or localities (Laurie, 1915; Shankarankutty & Thomas, 1963). The first record, and likely the second, can be attributed to Nobili (1906), which documented a specimen collected at the Banc de La Clocheterie reef, Obock, Djibouti (outside of the Red Sea). All other authors have excluded the Red Sea from the distribution of *L. orbicularis* (e.g., Guinot 1967, Vannini & Innocenti 2000, DiBattista *et al.* 2016). Here we provide the first record of *L. orbicularis* from the Red Sea.

Results and Discussion

Lissocarcinus currently includes nine species, all putatively symbiotic, primarily on echinoderms, cerianthids, sea anemones, and possibly salps and some corals (Caulier *et al.* 2012; Evans 2016, 2018, Stephenson, 1972). *Lissocarcinus orbicularis*, *Lissocarcinus holothuricola* (Streets, 1876), and *Lissocarcinus ornatus* Chopra, 1931 are all symbionts of sea cucumbers and exhibit similar colorations (Fig. 1), but they are easily distinguished by differences in their frontal margin, epibranchial ridge, and fifth pereopod (Stephenson, 1972).

During an expedition to Saudi Arabia, an ovigerous female (BNOM-1763) was collected from Majjde Reef, Red Sea, near the mouth of the Gulf of Aqaba. Together with three specimens at the Florida Museum (UF) from the Gulf of Aqaba (UF 47297) and Wasaliyat Islands (UF 48601, UF 48625), we report this species across much of the extent of the Red Sea. Recent expeditions to Oman and Djibouti resulted in additional specimens from the region (see <http://specifyportal.flmnh.ufl.edu/iz/>).

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