

## **First Report of a Sea cucumber, *Stichopus cf. monotuberculatus* (Quoy & Gaimard, 1833), from Hengam Island (Persian Gulf, Iran)**

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### **ABSTRACT**

*In Iran, sea cucumbers are not well known and they are not consumed as food. With this respect and the lack of scientific knowledge about them, this study has been conducted in order to identify the present species in the Northern part of Persian Gulf. Sample collected on intertidal zone of Hengam Island (Persian Gulf) via scuba diving on November 2011. The literature review on the distribution was reevaluated that this is the first report of *Stichopus cf. monotuberculatus* (Quoy & Gaimard, 1833) in Persian Gulf. The species identification was done through morphological keys and review of their ossicles.*

**Keywords:** Sea cucumber, *Stichopus cf. monotuberculatus*, Hengam Island, Persian Gulf, Iran.

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### **INTRODUCTION**

Sea cucumbers are usually soft-bodied echinoderms comprising a diverse group of flexible, elongated, worm-like organisms, with a leathery skin and gelatinous body, looking like a cucumber. Habitually, they tend to live on the sea floor in deep seas (Conand 1990). A multitude of harvestable sea cucumbers species have been exploited with growing global demand due to their food and pharmaceutical uses (Mehmet *et al*, 2011). Besides, there are several undescribed larger sea cucumber species living in shallow water which have not yet been systematically identified because there are rather a small number of holothurian taxonomists (Bruckner *et al*, 2003). This paper represents the first published record of *Stichopus cf. monotuberculatus* (Quoy & Gaimard, 1833) in Persian Gulf.

### **MATERIALS AND METHODS**

The species was sighted on 15 Nov. 2011 at the north intertidal shore of Persian Gulf (Hengam Island; 55°51'43"N, 26°40'86"E). A total of four individuals were seen. Two specimens were collected and preserved in 75% ethanol. The ossicles of the specimens were examined in order to verify the species' identity. Owing to the small size of the specimens, it was difficult to excise sufficient pieces of the integument without extracting the podia. Hence, both portions were extracted together. The tissues were left to stand in 2.0 ml of household bleach (NaOCl) until they had completely dissolved, with only the ossicles remaining as white sediment (Hickman 1998). These were then examined under the microscope and identified using keys (Cherbonnier 1952; Rowr and Gates 1995; Massin 1996).

## RESULTS AND DISCUSSION

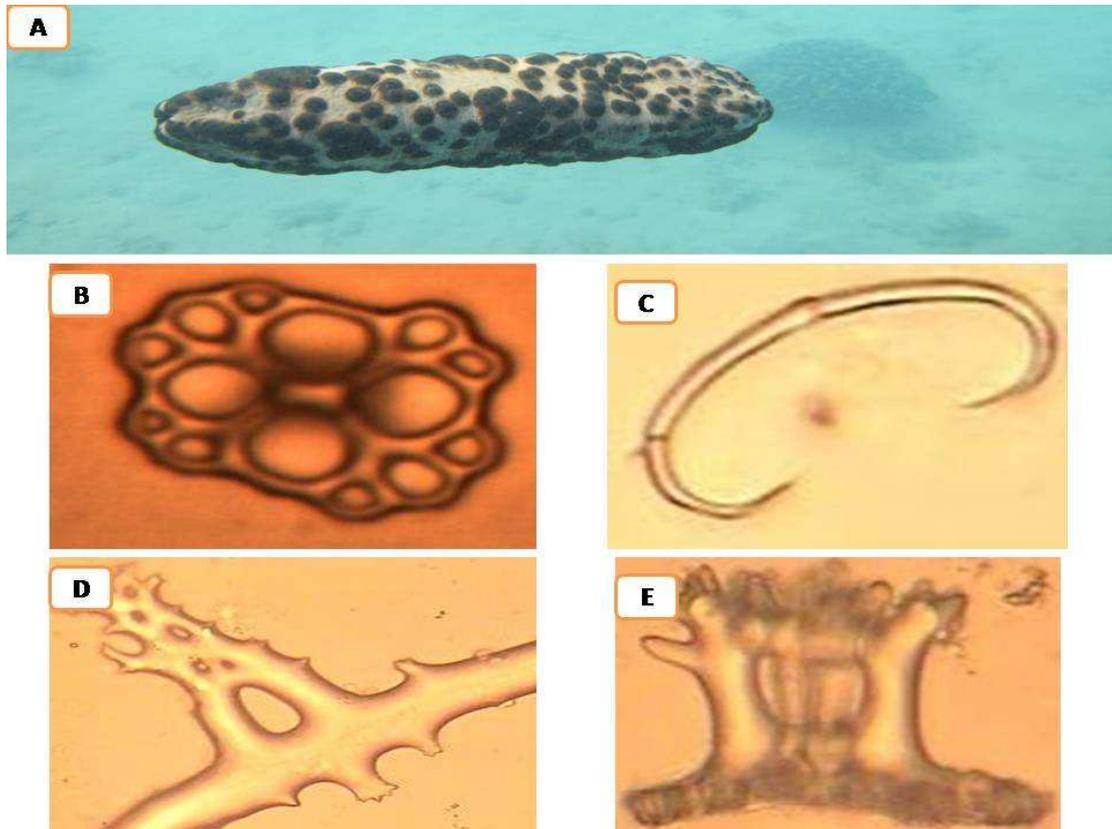
**Systematic**

Phylum Echinodermata

Class Holothuroidea

Order Aspidochirotida Grube, 1840

Family Stichopodidae Haeckel, 1886

Genus *Stichopus**Stichopus cf. monotuberculatus* (Quoy & Gaimard, 1833) (Fig. 2)

**Fig.2.** A. *Stichopus cf. monotuberculatus* (Quoy & Gaimard, 1833), B. tables from the ventral body wall; C. C-shaped rods from the ventral body wall; D. tables and rosettes from the dorsal body wall; E. modified rods from the ventral body wall; Scale A = 24 cm, B = 20 microns, C = 60 microns D,E = 100 microns.

**Description**

Dorsal side from grey green to orange-brown with dark green to black patches, ventral side grey-green with numerous small dark patches. In alcohol the colors fade to light green with patches of light brown. Ventral side flattened, dorsal side swollen, giving the animal a squarish view in cross-section. Mouth ventral surrounded by 20 large tentacles surrounded in turn by a circle of large papillae. Anus terminal, without anal teeth or papillae. Large cylindrical, yellowish brown tube feet in trivium in ambulacral areas only. Large conical papillae distributed more or less randomly in bivium, but with a distinct fringe of 8-10 larger papillae laterally. Skin rather rough compared to the other *Stichopus* species found in the region. The spicules match the descriptions given by Cherbonnier (1952) and Massin (1996b) but more specimens of different sizes from different localities are needed to clarify the identity of our specimens.

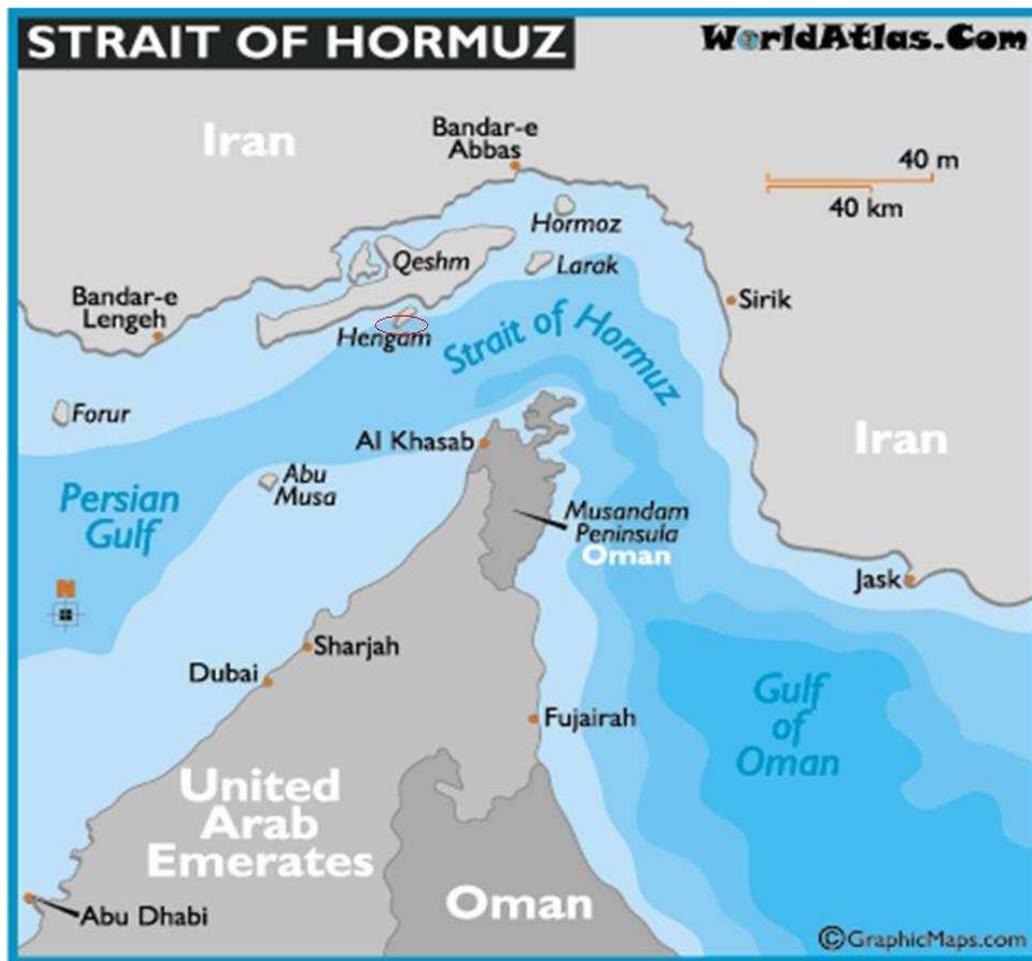


Fig.1. Sampling site of *Stichopus cf. monotuberculatus* around Hengam Island (Persian Gulf)

In most of the literature before 1995 *Stichopus monotuberculatus* is referred to as *Stichopus variegates* Semper, 1868, a name which is no longer valid, and has the characters of rosettes present only dorsally, prominent dorsal papillae, highly variable color patterns and being mainly active at night (Rowe and Gates 1995; Massin *et al*, 2002). The sea cucumber *Stichopus monotuberculatus* has a wide Indo-Pacific distribution and high commercial value due to its medicinal and edible properties (Massin 1996; Liao 1997). It is however an expected species since, Massin's distribution map (1996b, map 3, p. 174) shows an Indo-Pacific distribution from the Red sea and Madagascar to Eastern Islands, and from Japan to Australia. It has been demonstrated that *S. monotuberculatus* can be reared in captivity, thus the farming of this species would provide an alternative to fisheries (Hu *et al*. 2010). The literature review on the distribution was reevaluated that this is the first report of *Stichopus monotuberculatus* from Persian Gulf.

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