



NEW RECORDS OF TWO HARD CORAL SPECIES FROM NORTH EAST OF LARAK ISLAND (PERSIAN GULF, IRAN)

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Received: May 09, 2012; Accepted: June 01, 2012

Abstract: Two species of hard corals including *Goniastrea peresi* Faure and Pichon, 1978 (Faviidae) and *Psammocora digitata* Milne Edwards and Haime, 1851 (Siderastreidae) were new records from north east of Larak Island in Strait of Hurmoz, in the Persian Gulf in late 2008. The review of previous studies revealed that these species are the new reports from Larak Island at northern Persian Gulf. No evidence of *Goniastrea peresi* and *Psammocora digitata* is reported from southern Persian Gulf and Oman Sea.

Keywords- Coelenterata, Cnidaria, Faviidae, Siderastreidae, Larak Island, Persian Gulf

Citation: Fozieh Shojae, et al (2012) New Records of Two Hard Coral Species from North East of Larak Island (Persian Gulf, Iran). International Journal of Zoology Research, ISSN: 2231-3516 & E-ISSN: 2231-3524, Volume 2, Issue 1, pp.-36-39.

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Introduction

The Persian Gulf has complex and unique tropical marine ecosystems, especially coral reefs, with relatively low biological diversity and many endemic species [8]. In this area, the coral reefs communities are occurred in the form of non-reef setting [11] and surrounded by some of the driest landmasses in the world, such that continental influences are limited [8]. While large parts of the region are still in a pristine condition, several anthropogenic threats notably habitat destruction, over-exploitation and pollution are ever-increasingly disturbing the coral reef communities. The coral reef communities in the Persian Gulf are less diverse than that of Indian Ocean [8]. The knowledge of coral reef distribution on the Iranian waters of the Persian Gulf is very limited. Coral reefs are found encircling Iranian islands [14] with fringing reef being the dominant reef structure along the coastlines [15,16].

The distribution and status of the coral reefs in Iranian waters are poorly known. Early study by Rosen [12] recorded only 15 genera of hard corals in the northern part of the Persian Gulf and Saudi Arabia. Harington [6] reported the presence of corals at the Sheedvar Island. Harger [5] noted 19 coral species at Hormuz Island. Rezaei [9,10] examined the corals around different islands

and identified 35 species of hard corals around Larak, Farur, Banifarur, Tonb-e-Kuchak, Tonb-e-Bozorg, Hendourabi and Kish islands. Rezaei [9,10] reported the presence of soft coral (*Sacrophyton* sp.) and hard coral (*Seratopora* sp.) for the first time around Larak Island. Sadat Sadeghi [13] surveyed hard corals around Kish Island and identified 19 species. Acroporidae was found to be the most diverse family, while Faviidae and Poritidae occurred most frequently. Otherwise, Agariciidae and Dendrophyllidae occurred rarely. Fatemi and Shokri [4] identified 27 species of hard corals belonging to 9 families and 20 genera from Nayband Bay, Kish and Farur islands. They found that Faviidae with 6 genera and 8 species was the most diverse family. Poritidae was the most abundant corals in all areas with 2 genera and 4 species. Shojae, et al [17] records two species of hard corals including *Echinopora gemmacea*, *Leptoria irregularis* (Faviidae) and *Montipora incrassate* (Acroporidae) from north-east of Larak Island (Persian gulf, Iran). The eastern islands in the Strait of Hormuz are greatly influenced by the less saline and nutrient-rich oceanic waters from Indian Ocean, while the inner islands tolerate a more saline and less fertile condition prevailed in nearly entire region [18].

Given the paucity of information on species inventory of hard corals in Larak Island, the present study was undertaken to explore the species diversity of hard corals in this area. In this paper we described two species of hard corals that were new records from the Larak Island.

Material and Methods

The survey of coral reefs around Larak Island was conducted using Manta Tow Technique described in the Methods for Ecological Monitoring of Coral Reefs [7]. A diver equipped with snorkel and fins was towed around the island over the depths of 2-5 m at an approximate distance of 200-250 m from the shore. The geographical positions of starting and ending points were 26° 53' 21.86"N, 56° 21' 45.37"E and 26° 53' 14.25"N, 56° 23' 59.69"E, respectively (Fig. 1). The diver was towed at a speed of 3-5 km per hour, equivalent to a slow walk for two minutes. The pattern of coral distribution around the island was recorded. The coral specimens were collected from two sites where corals were abundant. The specimens were carried to the boat and preserved in 70% Ethanol. The coral specimens were bleached using hydro peroxide. The specimens were photographed showing the whole specimen and the corallite structures. Identification was done using Veron [19] and communication with Prof. Charles Sheppard at the Dept. of Biological Sciences, Warwick University. The materials are deposited in the Faculty of Marine Biology, University of Hormozgan, Iran.



Fig. 1- Coral reef distribution in the northern Persian Gulf and location of Larak Island.

Results and Discussion

Two species of hard corals including *Goniastrea peresi* (Faviidae) and *Psammodora digitata* (Siderastreaeidae) were new records from the area.

Goniastrea peresi Faure and Pichon, 1978

Kingdom: Animalia

Phylum: Coelenterata Frey and Leuckart 1847

Subphylum: Cnidaria Hatschek 1888

Class: Anthozoa Ehrenberg 1831

Subclass: Zoantharia de Blainville 1830

Order: Scleractinia Bourne 1900

Family: Faviidae Gregory 1900

Genus: *Goniastrea* Milne Edwards and Haime, 1848

Species: *peresi* Faure and Pichon, 1978

Taxonomic Reference: Scheer and Pillai (1983, *Favites peresi*)

Material examined

HCS1-39, 44, 102 HCS2-85, For specimens, Larak Island, coll. F. shojae.

Diagnosis characters

Colonies are encrusting and helmet-shaped, with neatly scalloped lower margins. Corallites are angular and characteristically aligned in short shallow radiating valleys at the colony margin, septa are strongly beaded. A small neat paliform crown is usually present. Budding is both intra and extratentacular. Usually pinkish-tan [19].

Habitat

Abundant at depth 2-5 meter depths at shallow reef environments.

Distribution

Reported from Red sea, Gulf of Aden, Eastern Africa, Madagascar, Seychelles, Mauritius, Chagos Archipelago, Maldives, Pakistan and Central Indian Coast, Southern India and Myanmar coast of Andaman sea [2].

Remarks

Corallites are angular and characteristically aligned in short shallow radiating valleys at the colony margin, septa are strongly beaded. A small neat paliform crown is usually present (Fig. 2).

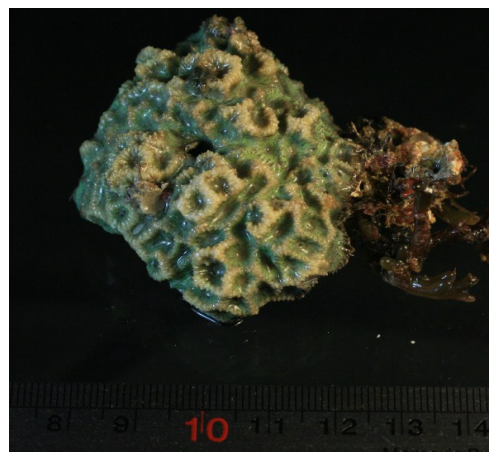


Fig. 2a- *Goniastrea peresi* - Natural specimen



Fig. 2b- *Goniastrea peresi* - Bleached specimen



Fig. 2c- *Goniastrea peresi* - Corallites

***Psammocora digitata* Milne Edwards and Haime, 1851**

Kingdom: Animalia

Phylum: Coelenterata Frey and Leuckart 1847

Subphylum: Cnidaria Hatschek 1888

Class: Anthozoa Ehrenberg 1831

Subclass: Zoantharia de Blainville 1830

Order: Scleractinia Bourne 1900

Family: Siderastreae Vaughan and wells, 1943

Genus: *Psammocora* Dana 1846

Species: *digitata* Milne Edwards and Haime, 1851

Taxonomic Reference: Veron and Pichon (1976)

Material examined

HCS1- 59, 78, HCS2-22,88,95,117 six specimens, Larak Island, coll. F. shojae.

Diagnosis characters

Colonies are composed of plates and or columns. corallites are small and shallow, sometimes forming shallow valleys, each with a few primary septa slightly exsert petaloid walls are indistinct. A small number of primary septo- costae are embedded in secondary septo-costae forming distinctive species-specific patterns. septo-costae have finely granulated margins. Columellae consist of groups of pinnules. Tentacles are usually extended only at night. purple, grey or brown [19].

Habitat

Abundant at depth 2-5 meter depths at most reef environments.

Distribution

Reported from Indo-Pacific and Indian Ocean [19], Indian Ocean (excluding the Gulfs), the Central Indo-Pacific, Australia, South-East Asia, Japan and the East China sea, the Oceanic West Pacific and the Central Pacific [3].

Remarks

Corallites are small and shallow, sometimes forming shallow valleys, each with a few slightly exsert petaloid primary septa (Fig. 3). Two hard corals species including *Goniastrea peresi* Faure and Pichon, 1978 (Faviidae) and *Psammocora digitata* Milne Edwards and Haime, 1851 (Siderastreae) reported for the first time from north east of Larak Island in Strait of Hurmoz, northern Persian Gulf. The review of previous studies revealed that these species were the new reports from Larak Island at northern Persian Gulf. Of these species only *Echinopora gemmacea* was earlier reported from Oman Sea [1]. No evidence of *Goniastrea peresi* and *Psammocora digitata* (Milne Edwards and Haime, 1851) is reported from southern Persian Gulf and Oman Sea. Hard coral biodiversity in the Persian Gulf is typically Indo-Pacific, with most species occurring in a wide geographical area [11]. The closest area to the Persian Gulf in terms of coral biodiversity in Indo-Pacific is the Red Sea [15].



Fig. 3a- *Psammocora digitata* - Natural specimen.



Fig. 3a- *Psammocora digitata* - Bleached specimen.



Fig. 3a- *Psammocora digitata* - Corallites.

Goniastrea peresi is very common species and is listed as Least Concern species in the IUCN Red List of Threatened Species [2]. This species is reported from the Red sea, Gulf of Aden, eastern Africa, madagasca, Seychelles, Mauritius, chagos Archipelago, Maldives, Pakistan and central Indian coast, southern india, and Myanmar coast of Andaman sea [2]. No earlier evidence of this species is reported from southern Persian Gulf and Oman Sea. Few specimens of *Goniastrea peresi* in the present study were collected from 2-5 meter depths at shallow reef environments.

Psammocora digitata is an uncommon species and listed as Near Threatened in the IUCN Red List of Threatened Species [3]. This is reported from Indo-Pacific and Indian Ocean [19], Indian ocean (excluding the Gulfs), the central Indo-pacific, Australia, south-East Asia, japan and the East china sea, the oceanic west pacific, and the central pacific [3]. No evidence of this species is reported from southern Persian Gulf and Oman Sea.

The findings of the present study are based on single sampling occasion in limited area. Further samplings in the present study area and other Iranian islands may lead to identification of new coral species.

Acknowledgments

We would like to express our appreciation to Mrs. Lale Daraei management of GEF/SGP in Iran, Mr. Abdullah Salehi and Mr. Mohammad Dakhte management of Geopark Institute of Qeshm, Island who assisted us in filed sampling. We are also greatly honored and thankful to Prof. Charles Sheppard at the Dept. of Biological Sciences, Warwick University for assistance in identifications of the specimens.

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