



Distribution of *Rhodactis cf. rhodostoma* (Hemprich and Ehrenberg, 1834) from Gulf of Kachchh coral reefs and Saurashtra coast of Gujarat state

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Short Communication

Abstract

Corallimorpharia is an order of marine Cnidarians. Representative of this group is commonly found in littoral and sub littoral zone with rocky substratum. This study report new occurrence and distribution range of *Rhodactis cf. rhodostoma* (Hemprich and Ehrenberg in Ehrenberg, 1834) (Class: Anthozoa, Order: Corallimorpharia) from coral reefs of Gulf of Kachchh and Saurashtra coast of Gujarat.

Keywords: Distribution range, *Rhodactis rhodostoma*, Gulf of Kachchh, Saurashtra coast.

Introduction

Corallimorpharians are group of marine animals belonging to order Hexacorallia of class Anthozoa (Phylum: Cnidaria). They are widely distributed on the coral reefs of Red Sea and Indo-Pacific Ocean (Langmead and Chadwick-Furman,

1999a; Work *et al.*, 2008). Due to their colonial habit and look likeness they are often mistaken with reef building corals (order Scleractinia). Phylogenetic studies have revealed that they are different from Actinarians and fall close to the Scleractinians (Fautin and Lowenstein, 1994). The Corallimorpharians, unlike other Anthozoans, are aggressive competitors for space in the reef environment (Chadwick, 1987; Kuguru *et al.*, 2004; Langmead and Chadwick-Furman, 1999a,b). They occur in a wide range of marine habitats, and are associated with phase shifts in coral reefs that change from hard-coral dominated to Corallimorpharians dominated reef (Work *et al.*, 2008).

However, despite their wide presence on the global reefs, their distribution in Indian waters has remained less known with only documentation from Gulf of Mannar (Fautin, 2013). In the present study, the occurrence and distribution of *Rhodactis cf. rhodostoma* in Gulf of Kachchh and adjacent areas on Saurashtra coast were documented.

Classification of *Rhodactis rhodostoma* (Hemprich and Ehrenberg in Ehrenberg, 1834)

Class : Anthozoa
Subclass : Hexacorallia
Order : Corallimorpharia

Family: Discosomidae Verrill, 1869
 Genus: *Rhodactis* Milne Edwards and Haime, 1851
 Species: *Rhodactis cf. rhodostoma* (Hemprich and Ehrenberg in Ehrenberg, 1834)

Material and methods

Random surveys were carried out on different coral reefs aligning southern shore of Gulf of Kachchh and adjacent Saurashtra coast facing the Arabian Sea (Fig. 1) to assess diversity of coral species and associated fauna during 2008 and 2013. All the species encountered during surveys were photographed *in situ* using digital camera (Canon D20) and the digital images were used to study morphological characters of the species based on personal communication with Dr. D. G. Fautin. Geo-coordinates were recorded for conspicuously large sized assemblage of colonies of Corallimorpharians using handheld GPS receiver (e-Trex H, Garmin).

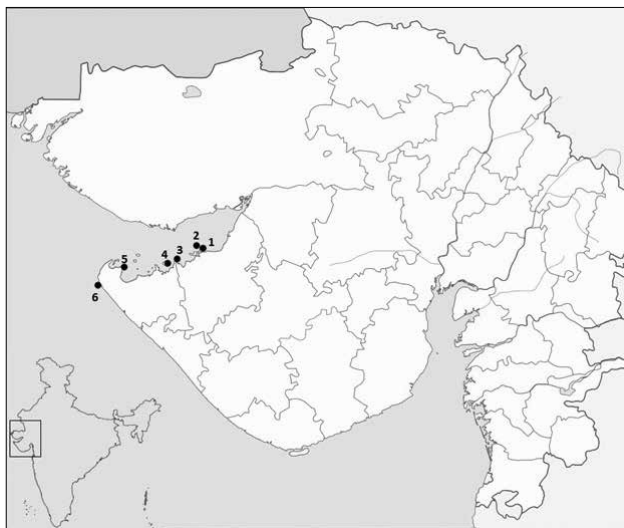


Fig. 1. Location Map showing distribution of *Rhodactis cf. Rhodostoma*, 1. Jindra Island, 2. Pirotan Island, 3. Narara Reef, 4. Kaludhar Island, 5. Poshitra Bay (Bhadu point), 6. Dwarka

Results and discussion

The presence of Corallimorpharians on coral reefs of Gulf of Kachchh was first reported from Narara Reef and the same was identified as *Rhodactis* sp. (Dave, 2011). Subsequently the species was identified as *Rhodactis cf. rhodostoma* and further survey of different coral reefs in Gulf of Kachchh and intertidal coast of Dwarka revealed distribution of *R. rhodostoma* on a wider scale (Table1).

The species lacks exoskeleton and is attached to hard substratum by short column. Diameter of light green

Table 1. Distribution of *R. CF. rhodostoma* on different reefs

| Name of island/ coastal area | Location on the reef |
|------------------------------|-------------------------|
| Jindra Island | Reef flat |
| Pirotan Island | Reef Flat and Reef edge |
| Narara reef | Reef Flat and Reef edge |
| Kalubhar Island | Reef Flat and Reef edge |
| Poshitra Bay (Bhadu point) | Reef edge |
| Dwarka coast | Rocky intertidal zone |

coloured oral disk ranges between 30-35 mm and it bears exerted mouth in the center. Protruding mouth is a characteristic feature of Corallimorpharians as compared to Actinarians (Sea-anemones) bearing an introvert mouth. Tentacles are brown coloured, short, branched and are arranged in rows radiating from the center. Alternate marginal tentacles are slightly longer and dark greenish in colour (Fig. 2).

R. cf. rhodostoma was observed to prefer water inundated reef slopes and large tidal pools covered with sand and mud. Areas with moderate water current tend to have larger colonies of *R. cf. rhodostoma*. They were observed to grow on dead coral boulders along with encrusting sponges. However, their distribution was sporadic on all the reef areas.

With only two distributional records of *Corynactis* sp. and *Rhodactis cf. rhodostoma* from near Pamban bridge and Krusadai Island in Gulf of Mannar respectively (Fautin, 2013), this present record of Corallimorpharians' distribution from Gulf of Kachchh reefs is an important finding as it contributes to the knowledge on extent of distribution of Corallimorpharians in Indian waters. This group of animals are known for its rigorous competitive nature for space in the reef environment (Langmead and Chadwick-Furman, 1999a). Moreover, their colonial habit, larger tentacles, rapid growth by means of budding and ability to withstand elevated temperatures for longer period makes them prone to affect spread of other sessile organisms significantly e.g. corals (Chadwick-Furman and Spiegel, 2000; Kuguru *et al.*, 2007). Further, disturbance and increased nutrient load in reef environment have found to be associated with higher density of Corallimorpharians (Kuguru *et al.*, 2004). Thus, presence and spread area of Corallimorpharians colonies can be used as a primary indicator for determining the coral reef health (Chadwick-Furman and Spiegel, 2000).

This being the preliminary study, which documents distribution of *R. cf. rhodostoma* from Gulf of Kachchh and Saurashtra coast, hence, there is scope to study its molecular taxonomy and phylogeny, ecological implication on the reef biota.

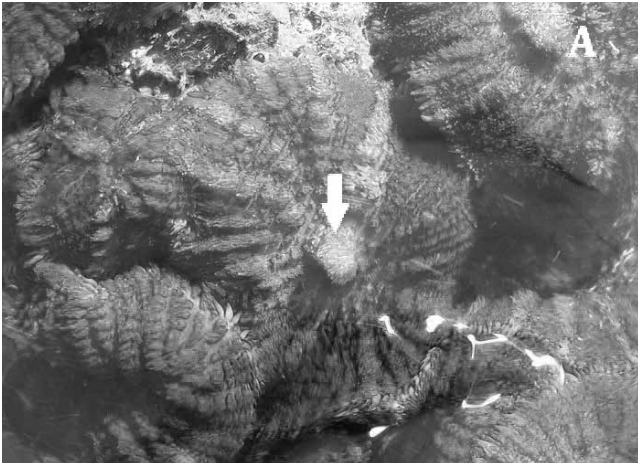


Fig. 2A. Individuals of *Rhodactis cf. rhodostoma* colony with protruding mouth in center



Fig. 2B. *Rhodactis cf. rhodostoma* over growing on encrusting sponge

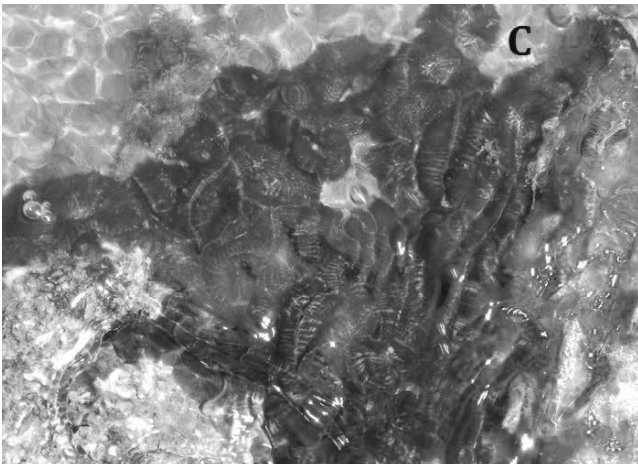


Fig. 2C. *Rhodactis cf. rhodostoma* on dead coral boulder surrounding sandy substratum



Fig. 2D. Bare column without exoskeleton

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