

A new scleractinian coral *Lobophyllia hemprichii* (Family Mussidae) reported first time from the Marine National Park, Gulf of Kachchh, India

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An extensive survey to explore the diversity and distribution of coral and associated faunal community around the Gulf of Kachchh Islands in India, yielded a new zoogeographical record of a coral species namely, *Lobophyllia hemprichii* from Pirotan Island, Marine National Park, Gulf of Kachchh. Literature reveals that 56 species of scleractinian corals have been recorded from the Gulf of Kachchh. Detailed description, distribution and variation in morphological characters of this species were presented in this account.

[Key words: Mussidae, *Lobophyllia hemprichii*, Pirotan Island, New record, Marine National Park, Gulf of Kachchh]

Introduction

Gulf of Kachchh Marine National Park is located in the northern most reef regions of the Arabian Sea, North-west coast of India. Being India's first Marine National Park and Sanctuary, located on the southern shores of the Gulf, covers an area of 620 km² of intertidal zones and 42 islands with a moderate diversity of coral fauna. When compared with other reef regions of the country, very less coral species were reported in Gulf of Kachchh (56 species belonging to 10 families) due to anthropogenic activities, industrialisation and natural climate changes¹⁻¹². The taxonomical identification of hard corals in underwater is limited by visual observation and by feeling the skeletal characters. The scleractinian hard corals; are divided into two types, namely Hermatypes and Ahermatypes. Present account confirms the distribution of a new Hermatypic hard coral to the Gulf of Kachchh Marine National Park.

Materials and Methods

Sample was collected during the survey on coral health monitoring and coral transplantation and restoration of Pirotan Island (Lat. 22^o35.052 N; Long. 69^o57.445 E), Marine National Park on 22nd January 2013. Collected specimen was identified based on the skeletal

morphology. A detailed observation and careful examination in the morphological characters of the skeletal structures was done, following (Veron, 2000)¹³. Voucher specimen was registered and deposited in the National Zoological Collection of ZSI.

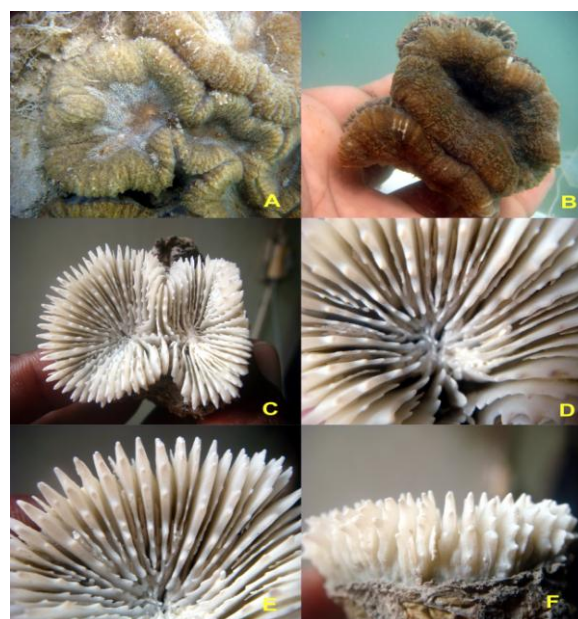


FIGURE 1 A – Live colony; B – Collected sample; C – Skeletal characters; D – Columella arrangements; E – Septa arrangements; F – Teeth on the septa.

TABLE 1 Check list of Scleractinian corals from Gulf of Kachchh

S.No	Name of the Species	Pillai 1983	Pillai et al., 1988	CHS et al., 2009	Kumar et al., 2014	Present study
1	Family: Acroporidae <i>Acropora humilis</i> (Dana, 1846)	*	*	*	-	-
2	<i>Acropora squarrosa</i> (Ehrenberg, 1834)	*	*	*	-	-
3	<i>Acropora microphthalma</i> (Verrill, 1869)	-	-	*	-	-
4	<i>Montipora explanata</i> (Brueggeman, 1879)	*	*	*	-	-
5	<i>Montipora monasteriata</i> (Forsk., 1775)	*	*	*	-	*
6	<i>Montipora turgescens</i> Bernard, 1897	*	*	*	-	-
7	<i>Montipora hispida</i> (Dana, 1846)	*	*	*	-	-
8	<i>Montipora foliosa</i> (Pallas, 1766)	*	*	*	*	*
9	<i>Montipora venosa</i> (Ehrenberg, 1834)	*	*	*	-	*
10	Family: Caryophyllidae <i>Paracyathus stokes</i> (Edwards and Haime, 1848)	*	*	*	*	*
11	<i>Polycyathus verrilli</i> Duncan, 1889	*	*	*	*	*
12	Family: Dendrophyllidae <i>Dendrophyllia minuscula</i> Bourne, 1905	*	*	*	-	*
13	<i>Tubastrea aurea</i> (Quoy and Gaimard, 1833)	*	*	*	-	-
14	<i>Turbinaria frondens</i> (Dana, 1846)	-	-	*	*	*
15	<i>Turbinaria crater</i> (Pallas, 1766)	*	*	-	-	-
16	<i>Turbinaria reniformis</i> Bernard, 1896	-	-	*	*	*
17	<i>Turbinaria peltata</i> (Esper, 1794)	*	*	*	*	*
18	<i>Turbinaria mesenterina</i> (Lamarck, 1816)	-	-	*	*	*
19	Family: Faviidae <i>Barabattoia amicornum</i> Milne Edwards and Haime, 1850	-	-	*	-	-
20	<i>Cyphastrea serailia</i> (Forsk., 1775)	*	*	*	*	*
21	<i>Favia fava</i> (Forsk., 1775)	*	*	*	*	*
22	<i>Favia lacuna</i> Veron, Turak, DeVantier, 2000	-	-	*	*	*
23	<i>Favia stelligera</i> (Dana, 1846)	*	-	-	-	-
24	<i>Favia speciosa</i> Dana, 1846	*	*	*	*	*
25	<i>Favites chinensis</i> (Verrill, 1866)	-	-	*	*	*
26	<i>Favites complanata</i> (Ehrenberg, 1834)	*	*	*	*	*
27	<i>Favites melicerum</i> (Ehrenberg, 1834)	*	*	-	-	-
28	<i>Favites flexuosa</i> (Dana, 1846)	-	-	*	*	*
29	<i>Favites halicora</i> (Ehrenberg, 1834)	-	-	*	*	*
30	<i>Favites pentagona</i> (Esper, 1794)	-	-	*	*	*
31	<i>Goniastrea pectinata</i> (Ehrenberg, 1834)	*	*	*	*	*
32	<i>Leptastrea purpurea</i> (Dana, 1846)	*	*	*	-	*
33	<i>Platygyra sinensis</i> (Milne Edwards & Haime, 1849)	*	*	-	-	-
34	<i>Platygyra pini</i> (Chevalier, 1975)	-	-	*	*	*
35	<i>Plesiastrea versipora</i> (Lamarck, 1816)	*	*	*	*	*
36	Family: Merulinidae <i>Hydnophora exesa</i> (Pallas, 1766)	*	*	*	*	*
37	Family: Mussidae <i>Acanthastrea simplex</i> (Crossland, 1848)	*	*	-	-	-
38	<i>Acanthastrea hillae</i> Wells, 1955	-	-	*	*	*
39	<i>Lobophyllia hemprichii</i> (Ehrenberg, 1834)	-	-	-	-	*

40	<i>Symphyllia radians</i> (Edwards & Haime, 1849)	*	*	*	*	*
	Family: Pectinidae					
41	<i>Echinophyllia aspera</i> (Ellis and Solander, 1788)	-	-	*	-	*
42	<i>Mycedium elephantotus</i> (Pallas, 1766)	*	*	*		*
	Family: Pocilloporidae					
43	<i>Pocillopora damicornis</i> (Linnaeus, 1758)	-	-	*	-	-
	Family: Poritidae					
44	<i>Goniopora planulata</i> (Ehrenberg, 1834)	*	*	*	*	*
45	<i>Goniopora nigra</i> Pillai, 1967	*	*	-	-	-
46	<i>Goniopora stutchburyi</i> Wells, 1955	-	-	*	-	*
47	<i>Goniopora tenuidens</i> (Quelch, 1886)	-	-	*	-	*
48	<i>Goniopora minor</i> Crossland, 1952	*	*	*	*	*
49	<i>Porites compressa</i> Dana, 1846	*	*	*	*	*
50	<i>Porites lichen</i> Dana, 1846	*	*	*	*	*
51	<i>Porites lutea</i> Milne Edwards and Haime, 1860	*	*	*	*	*
	Family: Siderastreidae					
52	<i>Coscinaraea columna</i> (Dana, 1846)	-	-	*	*	*
53	<i>Coscinaraea monile</i> (Forsk., 1775)	*	*	*	*	*
54	<i>Pseudosiderastrea tayami</i> Yabe & Sugiyama, 1935	*	*	*	*	*
55	<i>Psammocora digitata</i> Milne Edwards & Haime, 1851	*	*	*		*
56	<i>Siderastrea savigniana</i> Edwards & Haime, 1850	*	*	*	*	*
	Total	38	37	49	31	41

* Present, - Absent, CHS – Ch Satyanarayana *et al.*, 2009

Results

A total of 56 species, belonging to 27 genera and 10 families have been recorded from Marine National Park, Gulf of Kachchh (Table - 1). *Lobophyllia hemprichii* is observed for the first time from Pirotan Island, Gulf of Kachchh, Marine National Park during this present study period (Figure -1). A description of this species is given below.

Phylum: Cnidaria

Class: Anthozoa

Order: Scleractinia

Family: Mussidae

Genus: *Lobophyllia*

Species: *Lobophyllia hemprichii*
(Ehrenberg, 1834)

Common Name: Large brain root coral

IUCN Red List Category & Criteria: Least Concern

Material Examined: One sample: height 7.8 cm; Width 3.2 cm; Length 4 cm; collected from a depth of 2 meters during low tide and more than 5 meters during the high tide; Pirotan Island, MNP, GOK; habitat of the specimen was a reef slope with turbid and high water current environment.

Description: colony pale yellowish brown in colour when alive, variation noted on polyp shape, texture and colour. This same species was noticed with greenish brown colour in Andaman and Nicobar islands (first author, *personal observ.*). Colonies are massive, hemispherical or flattened. Colonies are phaceloid to flabellomeandroid, Corallites or valleys are large, septa taper in thickness from the wall to the columella and have tall sharp teeth and columellae centres are broad and compact.

Key Character: Corallites have irregular in shapes and 35 to 50 mm in diameter and the teeth on septa (3mm width; 4 mm height).

Previous Distribution Report: Red Sea, Tahiti, Gulf of Aden, Southeast Asia, Japan, East China Sea, Tonga, Great Barrier reef, North, west and east Australia, northern Indian Ocean and Andaman and Nicobar, India.

Discussion

Nearly 478 species of corals are known from the seas around the Indian waters, of which about 424 species belonging to 86 genera and 19 families are from Andaman and Nicobar Islands, 104 species belonging to 37 genera and 13 families from Lakshadweep Islands, 117 species

under 40 genera and 14 families from Gulf of Mannar Islands¹⁴, in Gulf of Kachchh, 56 species under 27 genera and 10 families were reported^{8,12,15}. The Gulf of Kachchh, Marine National Park has the least coral cover, when compared with the other reef regions in India. From Indian waters, this *Lobohyllia hemprichii*, species has previously reported from Andaman and Nicobar Islands¹⁶. This species is present in endanger IUCN red list of threatened species. This species has reported from a depth range of 9 to 15m and can occur down to about 50m¹⁷, but present study revealed the distribution of the species from 2m depth. Discovery of this species may increase the diversity index of this marine ecosystem and will leave the potential for more species discovery from the study sites.

Conclusion

The present checklist provides 56 species belonging to 27 genera and 10 families of scleractinian coral reported from Gulf of Kachchh based on through literature compilation. In addition, the morphological feature of newly recorded *Lobohyllia hemprichii* has been presented from Pirotan Island. It is expected that several extensive surveys are required in the near future to reveal addition of species content of Marine National Park, Gulf of Kachchh.

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