NEW RECORDS OF CORALS FROM LAKSHADWEEP ISLANDS

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INTRODUCTION

The Lakshadweep (Laccadive Islands) is situated in the Arabian Sea (71°–74°E Longitudes and 8°–12°N Latitudes) about 225-450 km from the southwest coast of India. There are 27 islands in Lakshadweep covering a total land area of 28.54 km² of which, 11 islands are inhabited and have a land area of 26.89 km², while the 16 uninhabited islets are 1.65 km² (Attakoya, 2000). Most of the islands are located within the 12 atolls. The height of the land above sea level in the islands is generally 1-2 m and the terrain is mostly flat. Lakshadweep is lying along a north-south axis (except Androth Island, the length of which is in East-West direction) with lagoon on the west and open sea on the east. Estimated total coral reef area in these islands is 276 km² including the reef flat area of 136.5 km² (Bahuguna and Nayak, 1998).

Taxonomic studies of Indian corals are almost totally restricted to the pioneering works of Pillai (1971a, 1971b, 1972), Scheer and Pillai (1974), Reddiah (1977), Pillai and Patel (1988), Pillai and Jasmine (1989) in the 70s and 80s. Logistic constraints, notably lack of SCUBA facilities, had limited the collections in all these surveys from no more than a few meters depth. The total number of 199 species of scleractinian corals (155 hermatypes under 50 genera and 44 hermatypes under 21 genera) recorded in the eighties stands unaltered since then; only recently, when extensive collections were made in Andamans, nearly 100 species not reported previously were found (Venkataraman et al., 2003).

A compilation by Pillai and Jasmine (1989) showed 104 coral species under 37 genera in these atolls (9°–12°N; 72°–74°E), mainly from the southern ones. Extensive surveys were made from the year 2001 to 2003 at 5–20 m depth in Lakshadweep Islands revealed, the 20 coral species not reported so far from these islands were recorded for the first time. The systematic details of each

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species are given below. Among these, *Montipora foveolata*, *Cycloseris tenuis*, *Fungia seychellensis*, *Lobophyllia serrataus* and *Oulophyllia bennettiae* are being recorded for the first time from any of the Indian reefs. Lakshadweep Islands are located in the Laccadive-Maldive-Chagos ridge and its coral species composition, therefore, can be expected to reflect those of Chagos or Maldives. So far, 220 species under 58 genera, and 248 species under 57 genera, have been reported respectively from Chagos (Sheppard, 2000) and Maldives (Pichon and Benzi, 2007). Compared with these, it is safe to presume that the diversity of corals in Lakshadweep is likely to be twice higher than what is known now.

**MATERIALS AND METHODS**

Scleractinian corals of India are protected under Schedule I of Wild Life Protection Act of India, 1972. Collection of coral specimens are strictly prohibited under this act. Hence, coral identification was made based on the field observation during SCUBA diving and underwater photographs. Regular field trips to Lakshadweep Islands had been organized by the author from the year 2001 to 2003, using SCUBA diving vessels made available by the Lakshadweep Coral Reef Monitoring Network (LCRMN). Under water photography was done by using Nikonas V camera with close-up-outfit and Nikonas 105 strobe illumination. The identification of all the coral species were made following the taxonomic monographs of Veron and Pichon (1976), Veron et al., (1977), Veron and Pichon (1980 & 1982), Veron and Wallace (1984), Veron (1986), Hoeksema (1989), Veron (2000).

**SPECIES NEWLY RECORDED FROM LAKSHADWEEP ISLANDS**

1. *Montipora foveolata* (Dana, 1846)*
2. *Acropora valida* (Dana, 1846)
3. *Physogyra lichtensteini* (Edwards and Haime, 1851)
4. *Pavona explanulata* (Lamarck, 1816)
5. *Pavona duerdeni* Vaughan, 1907
6. *Pachyseris rugosa* (Lamarck, 1801)
7. *Cycloseris cyclolites* (Lamarck, 1801)
8. *Cycloseris costulata* (Ortmann, 1889)
9. *Cycloseris tenuis* (Dana, 1846)*
10. *Fungia granulosa* Klunzinger, 1879
11. *Fungia seychellensis* Hoeksema, 1993*
12. *Herpolitha limax* (Esper, 1797)
13. Pectinia lactuca (Pallas, 1766)
14. Hydnophora exesa (Pallas, 1766)
15. Lobophyllia serratus Veron, 2000*
16. Sympyphlia recta (Dana, 1846)
17. Platgyra pini Chevalier, 1975
18. Oulophyllia bennettae (Veron and Pichon, 1977)*
19. Porites murrayensis Vaughan, 1918
20. Porites vaughani Crossland, 1952

*New to India

SYSTEMATIC ACCOUNT

Phylum CNIDARIA Hatschek, 1888
Class ANTHOZOA Ehrenberg, 1834
Order SCLERACTINIA Bourne, 1900
Family ACROPORIDAE Verrill, 1902
Genus Montipora de Blainville, 1830

Montipora foveolata (Dana, 1846) Velvet coral
(Fig. 1)


Materials examined: Kavaratti island - 5 colonies, Amini island - 2 colonies, Androth island - 3 colonies, Chetlat island - 1 colony, Kiltan island - 1 colony, Bitra island - 7 colonies.

Distribution: New record to India.

Elsewhere: Southeast Asia and Australia.

Genus Acropora Oken, 1815

Acropora valida (Dana, 1846) Table coral
(Fig. 2)

Materials examined: Kavaratti island - 3 colonies.

Distribution: India-Gulf of Mannar and Andaman & Nicobar Islands.

Elsewhere: Red Sea to Central America and Australia.

Family EUPHYLLIDAE Veron, 2000

Genus Physogyra Quelch, 1884

Physogyra lichensteini (Edwards and Haime, 1851) Small bubble coral
(Fig. 3)


Materials examined: Kavaratti island - 9 colonies, Chetlat island - 2 colonies, Kiltan island - 1 colony, Androth island - 2 colonies, Bitra island - 3 colonies, Suheli island - 8 colonies.

Distribution: India-Andaman & Nicobar Islands.

Elsewhere: Madagascar east to Marshall Islands and Australia.

Family AGARICIIDAE Gray, 1847

Genus Pavona Lamarck, 1801

Pavona explanulata (Lamarck, 1816) Star column coral
(Fig. 4)


Materials examined: Kavaratti island - 3 colonies, Amini island - 2 colonies, Agatti island - 4 colonies, Suheli island - 3 colonies, Minicoy island - 5 colonies.

Distribution: India-Andaman & Nicobar Islands.

Elsewhere: Madagascar east to Philippines and Eastern Australia.

Pavona duerdeni Vaughan, 1907 Star coral
(Fig. 5)

Materials examined: Kavaratti island - 3 colonies, Androth island - 5 colonies, Kiltan island - 2 colonies, Chetlat island - 2 colonies, Kadmat island - 1 colony.

Distribution: India-Andaman & Nicobar Islands.

Elsewhere: Maldives, Red Sea to Central America and Australia.

Genus *Pachyseris* Milne Edwards and Haime, 1849

*Pachyseris rugosa* (Lamarck, 1801) Elephant skin coral

(Fig. 6)


Materials examined: Kavaratti island - 3 colonies, Kiltan island - 3 colonies, Chetlat island - 1 colony, Bitra island - 1 colony, Amini island - 1 colony, Androth island - 4 colonies.

Distribution: India-Gulf of Mannar, Andaman & Nicobar Islands.

Elsewhere: Red Sea east to Marshall Islands, Micronesia, Samoa and Australia.

Family FUNGIIDAE Dana, 1846

Genus *Cycloseris* Milne Edwards and Haime, 1849

*Cycloseris cyclolites* (Lamarck, 1801) Mushroom coral

(Fig. 7)


Materials examined: Kavaratti island - 4 colonies, Chetlat island - 2 colonies, Bitra island - 7 colonies.

Distribution: India-Gulf of Mannar, Andaman & Nicobar Islands.

Elsewhere: Red Sea east to Japan and Australia.

*Cycloseris costulata* (Ortmann, 1889) Mushroom coral

(Figs. 8a & 8b)

Materials examined: Kavaratti island - 3 colonies, Chetlat island - 1 colony, Bitra island - 11 colonies.

Distribution: India-Andaman & Nicobar Islands.

Elsewhere: Maldive islands east to Bismark Archipelago and Australia.

*Cycloseris tenuis* (Dana, 1846) Mushroom coral (Figs. 9a & 9b)


Materials examined: Chetlat island - 1 colony, Bitra island - 2 colonies.

Distribution: New record to India.

Elsewhere: Maldives, Philippines to Micronesia and Australia.

Genus *Fungia* Lamarck, 1801

*Fungia granulosa* Klunzinger, 1879 Mushroom coral (Fig. 10)


Materials examined: Kavaratti island - 1 colony, Bitra island - 2 colonies.

Distribution: India-Andaman & Nicobar Islands.

Elsewhere: Red Sea east to Philippines and Australia.

*Fungia seychellensis* Hoeksema, 1993 Mushroom coral (Figs. 11a, 11b & 11c)


Materials examined: Bitra island - 1 colony.

Distribution: New record to India.

Elsewhere: Seychelles and Chagos Archipelago.
Genus *Herpolitha* Eschscholtz, 1825

*Herpolitha limax* (Esper, 1797) Tongue coral
(Fig. 12)


*Materials examined*: Bitra island - 2 colonies.

*Distribution*: India-Andaman & Nicobar Islands.

*Elsewhere*: Red Sea east to Tuamoto Archipelago and Australia.

Family PECTINIIDAE Vaughan & Wells, 1943

Genus *Pectinia* Oken, 1815

*Pectinia lactuca* (Pallas, 1766) Hibiscus coral
(Figs. 13a & 13b)


*Materials examined*: Kavaratti island - 3 colonies, Chetlat island - 1 colony, Bitra island - 1 colony, Suheli island - 5 colonies.

*Distribution*: India-Andaman & Nicobar Islands.

*Elsewhere*: From Madagascar east to Fiji and Australia.

Family MERULINIDAE Verrill, 1846

Genus *Hydnophora* Fischer de Waldheim, 1807

*Hydnophora exesa* (Pallas, 1766) Horn coral
(Fig. 14)

Materials examined: Kavaratti island - 2 colonies, Kadmat island - 1 colony, Androth island - 2 colonies, Suheli island - 2 colonies, Minicoy island - 1 colony.

Distribution: India-Andaman & Nicobar Islands.

Elsewhere: Western Pacific Ocean and Australia.

Genus *Oulophyllia* Miine Edwards & Haime, 1848

*Oulophyllia bennettae* (Veron and Pichon, 1977) Labyrinth coral

(Fig. 18)


Materials examined: Kavaratti island - 2 colonies, Androth island - 5 colonies.

Distribution: New record to India.

Elsewhere: South East Asia and Australia.

Family PORITIDAE Gray, 1842

Genus *Porites* Link, 1807

*Porites murrayensis* Vaughan, 1918 Mustard coral

(Fig. 19)


Materials examined: Kavaratti island - 6 colonies, Chetlat island - 5 colonies, Bitra island - 2 colonies, Suheli island - 7 colonies.

Distribution: India-Andaman & Nicobar Islands.

Elsewhere: Maldives to Samoa and Australia.

*Porites vaughani* Crossland, 1952 Pore coral

(Fig. 20)


**Materials examined:** Kavaratti island - 9 colonies, Bitra island - 5 colonies, Androth island - 2 colonies.

**Distribution:** India-Andaman & Nicobar Islands.

**Elsewhere:** South China Sea and Australia.

**SUMMARY**

Underwater survey of the coral reefs at 10 of 27 islands of Lakshadweep *i.e.*, Agatti, Androth, Amini, Bitra, Chetlat, Kadmat, Kavaratti, Kiltan, Minicoy and Suheli islands revealed 20 species to be new record to the fauna of Lakshadweep. Among these, 5 species namely *Montipora foveolata*, *Cycloseris tenuis*, *Fungia seychellensis*, *Lobophyllia serratus* and *Oulophyllia bennettae* are new record to the Indian coral reefs. Systematic account of the 20 species with distribution is given.

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**REFERENCES**


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PLATE I

Fig. 1: Montipora foveolata

Fig. 2: Acropora valida

Fig. 3: Physogyra lichtensteini

Fig. 4: Pavona explanulata

Fig. 5: Pavona duerdeni
PLATE III

Fig. 11a: *Fungia seychellensis*

Fig. 11b: *Fungia seychellensis*

Fig. 11c: *Fungia seychellensis*

Fig. 12: *Herpolitha limax*

Fig. 13a: *Pectinia lactuca*

Fig. 13b: *Pectinia lactuca*
PLATE IV

Fig. 14: Hydnophora exesa

Fig. 15: Lobophyllia serratus

Fig. 16: Symphyllia recta

Fig. 17: Platygyra pini

Fig. 18: Oulophyllia bennethae

Fig. 19: Porites murrayensis

Fig. 20: Porites vaughani