

## **ECHINODERMS OF THE MALDIVES**

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### **INTRODUCTION**

Dr. Stanley Gardiner for his classic work on the Fauna and Geography of the Maldives and Laccadive Archipelagoes collected Echinoderms from the Maldives and also from the Minicoy Island in the Laccadives. Crinoids, Asteroids, Ophiuroids and Echinoids collected by him were reported by Bell (1902). Unfortunately some of his identifications proved to be wrong and these were corrected by Clark and Davies (1966), who also reported on a small collection of Echinoderms from the Maldives, mainly from the Addu Atoll. Holothurians collected by Gardiner were cursorily reported by Pearson (1913, 1914) along with other holothurian collections. Clark and Rowe (1971) listed Echinoderms from the Maldivian area which includes the Laccadives also. James and Manikfan (1994) described the commercially important sea cucumbers used for processing from the Maldives. Apart from these papers, some Maldivian Echinoderms are also mentioned in various monographs and papers.

James (1989) reported 77 species of Echinoderms from all the ten Islands of Laccadives. All these species are likely to be distributed in the Maldives also since the faunal composition of Maldives and Laccadives is similar (James, 1986).

In 1979 late Dr. S. Jones, former Director of Central Marine Fisheries Research Institute made arrangements for the collection of Echinoderms from Male through the courtesy of Danish scientists who were stationed there at that time. At the end of 1998 the author had an opportunity to work as a FAO Consultant on sea cucumber culture in the Maldives. He collected 38 species from Kadhdhoo Island in the Laamu Atoll, on the reef flat during the low tide. Some Crinoids were also collected from the Laamu Atoll. They were broken into small bits in transit rendering identification impossible. The Fisheries Department of the Maldives also collected some species from Male in 1998 for the identification of the author. Recently the author's student Dr. M. K. Ram Mohan collected some species from the Thaa Atoll. All the species thus collected formed the basis of the present paper. The species from Male were collected from a depth of 2–5 m. and those from the Laamu and Thaa Atolls were collected from the reef flat during low tide.

In the present paper 47 species belonging to four classes are listed below. All the species are widely distributed in the Indo-West Pacific region. Four species are recorded here for the first time

from the Maldives and these are marked with an asterisk. At the end of the paper some remarks are given on the distribution of Echinoderm fauna of Kadhdhoo Island.

Class ASTEROIDEA

Family OPHIDIASTERIDAE

1. *Dactylosaster cylindricus* (Lamarck) Laamu Atoll
2. *Fromia indica* (Perrier) Male
3. *Linckia laevigata* (Linnaeus) Laamu Atoll, Thaa Atoll, Male
4. *Linckia multifora* (Lamarck) Laamu Atoll, Thaa Atoll, Male

Family ACANTHASTERIDAE

5. *Acanthaster planci* (Linnaeus) Male

Family OREASTERIDAE

6. *Culcita schmideliana* (Retzius) Laamu Atoll, Male

Class OPHIUROIDEA

Family OPHIOCOMIDAE

7. *Ophiocoma scolopendrina* (Lamarck) Laamu Atoll, Male
- \*8. *Ophiocoma anaglyptica* Ely Laamu Atoll
9. *Ophiocoma dentata* Muller & Troschel Laamu Atoll
10. *Ophiocoma erinaceus* Muller & Troschel Laamu Atoll, Male
11. *Ophiomastix annulosa* (Lamarck) Laamu Atoll

Class ECHINOIDEA

Family DIADEMATIDAE

12. *Diadema setosum* (Leske) Laamu Atoll
13. *Echinothrix diadema* (Linnaeus) Laamu Atoll, Male
14. *Echinothrix calamaris* (Pallas) Laamu Atoll

Family STOMPONEUSTIDAE

15. *Stomopneustes variolaris* (Lamarck) Laamu Atoll

## Family TOXOPNEUSTIDAE

16. *Tripneustes gratilla* (Linnaeus) Laamu Atoll
17. *Toxopneustes pileolus* (Lamarck) Laamu Atoll

## Family ECHINOMETRIDAE

18. *Echinometra mathaei* (de Blainville) Laamu Atoll
19. *Heterocentrotus mammillatus* (Linnaeus) Thaa Atoll, Male

## Family CLYPEASTERIDAE

20. *Clypeaster reticulatus* (Linnaeus) Laamu Atoll

## Family FIBULARIDAE

21. *Fibularia volva* L. Agassiz Laamu Atoll

## Family LAGANIDAE

22. *Laganum depressum* Lesson Laamu Atoll

## Class HOLOTHUROIDEA

## Family HOLOTHURIIDAE

23. *Pearsonothuria graeffei* (Semper) Laamu Atoll, Male
24. *Actinopyga mauritiana* (Quoy & Gaimard) Laamu Atoll
25. *Actinopyga lacanora* (Jaeger) Laamu Atoll
26. *Actinopyga miliaria* (Quoy & Gaimard) Laamu Atoll
27. *Actinopyga echinites* (Jaeger) Laamu Atoll
28. *Bohadschia marmorata* (Jaeger) Laamu Atoll
29. *Bohadschia argus* (Jaeger) Laamu Atoll
30. *Holothuria (Halodeima) atra* (Jaeger) Laamu Atoll
31. *Holothuria (Thymiosycia) hilla* Lesson Laamu Atoll
- \*32. *Holothuria (Thymiosycia) arenicola* Semper Laamu Atoll
33. *Holothuria (Thymiosycia) impatiens* (Forsk.) Laamu Atoll
34. *Holothuria (Mertensiothuria) leucospilota* Brandt Laamu Atoll
35. *Holothuria (Microthele) nobilis* Selenka Laamu Atoll
- \*36. *Holothuria (Microthele) fuscogilva* Cherbonnier Laamu Atoll
37. *Holothuria (Lessonothuria) pardalis* Selenka Laamu Atoll
38. *Holothuria (Platyperona) difficilis* Semper Male
39. *Holothuria (Semperothuria) cinerascens* (Brandt) Laamu Atoll

## Family STICHOPODIDAE

40. *Stichopus chloronotus* Brandt Laamu Atoll  
 41. *Stichopus herrmanni* Semper Laamu Atoll, Male  
 \*42. *Stichopus vastus* Sluiter, Male  
 \*43. *Stichopus horrens* Selenka Laamu Atoll, Thaa Atoll  
 44. *Thelenota ananas* (Jaeger), Male  
 45. *Thelenota anax* H. L. Clark, Male

## Family PHYLLOPHORIDAE

46. *Afrocucumis africana* (Semper) Laamu Atoll

## Family SYNAPTIDAE

47. *Synapta maculata* (Chamisso & Eysenhardt) Thaa Atoll

## REMARKS

Intensive collections were made on the reef flat at Kadhdhoo Island in the Laamu Atoll in front of the guest house for one week during low tide. The area seemed to be poor in echinoderms since only 38 species could be collected during an intensive search of one week. The starfish *Linckia multifora* which is common in the Laccadives seems to be rare here. *L. laevigata* occurred in two colour forms, blue and pinkish-brown. The blue form had shorter and thicker arms and occurred openly. The other colour form had longer and slender arms and found associated with coral. Only young ones (R 15–18 mm) of *Culcita schmideliana* which were light green in colour were seen on the reef flat. Near the low water mark under coral stones large specimens of *Ophicoma erinaceus* were found. The echinoid *Echinometra mathaei* also occurred in two colour forms, light green and black. Among the sea cucumbers *Holothuria (Thymiosycia) hilla* was common. Often under one coral stone two or three specimens were found. Surprisingly *Holothuria (Halodeima) atra* and *Holothuria (Mertensiothuria) leucospilota* were also rare. *Stichopus horrens* (150 mm in length) had bluish tubercles. One specimen of *Holothuria (Thymiosycia) arenicola* had two gastropod parasites attached to the skin. One small specimen (40 mm in length) *Actinopyga mauritiana* was collected. On the whole the echinoderm fauna of this area is poor.

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