International Journal of Integrative sciences, Innovation and Technology
(A Peer Review E-3 Journal of Science Innovation Technology)
Section A – Basic Sciences; Section B –Applied and Technological Sciences; Section C – Allied Sciences
Available online at www.ijiit.net.

Research Article

NEW SPECIES OF SOFT CORALS (OCTOCORALLIA: ALCYONACEA) ON THE CORAL REEF OF ANDAMAN AND NICOBAR ISLANDS

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ABSTRACT

Newly recorded two species viz. *Clavularia viridis* and *Briareum hamrum* under the order Alcyoniidae, families Briareidae and Clavulariidae from Ritchie's Archipelago, South Andaman Islands are described and illustrated. The form of the sclerites is mostly as smooth to warty rods, long narrow spindles, 6-8 radiates and flattened rods (below 0.3mm in length). Photomicrographs of the sclerites illustrate their form, size and relative abundance.

KEYWORDS: *Gorgoniidae, Rumphella,* Octocorallia, Andaman and Nicobar Islands

INTRODUCTION

The Andaman and Nicobar Islands are located in the south eastern part of the Bay of Bengal between latitudes 6^0 45' and 13^0 41'N and longitudes 92^0 12' and 93^0 57'E. The archipelago is one of the few key biodiversity regions in the world surrounded by fringing coral reefs characteristic of the Southeast Asian region and is the most diverse among Indian subcontinent reef areas (Pillai, 1983). Octocorals are among the prominent components of reef communities in the Andaman and Nicobar Islands. The anthozoan sub-class Octocorallia is known to be a good source of bioactive compounds.

The taxonomic literature on Octocorals from the Indo-Pacific reefs (Dineson, 1983; Benayahu,1985; Lasker, 1988; Yamazato, *et al.,* 1981; Alderslade, and Shirwaiker, 1991; Ofwegen Van, and Benayahu, 1992; Verseveldt, and Van ofwegen, 1991; Benayahu, 1990, 1993, 1995) have proved their abundance and ecological significance. Taxonomic revision of the major genera of the family Alcyoniidae (Verseveldt, 1980; 1982; 1983) significantly contributes to the soft coral studies. Genera *Briareidae* and *Clavulariidae* were reported from different places of the world (Bayer, 1973; Gohar, 1948, Alderslade, 2000; Katharina Fabricius and Alderslade, 2001). Very few comprehensive works are available on the soft corals of Indian waters (Pratt, 1903, 1905; Hickson, 1903, 1905; Thomson, and Simpson, 1909; Jayasree, *et al.*, 1994; Jayasree, and Parulekar, 1997). Jayasree *et al*. (1996) recorded 26 species of soft corals from Andaman and Nicobar Islands belonging to the family Alcyoniidae. Later on Venkataraman *et al.* (2004) reported 221 species of octocorals belonging to 3 order and 27 families from these Islands. However, the recent survey conducted during 2009 – 2011 in Andaman and Nicobar Islands revealed out 51 species of gorgonians belonging to 25 genera, 8 families, and 3 sub – orders reported by Venkataraman *et al.,* (in press). The present work reports two newly recorded Alcyoniidae from Andaman and Nicobar islands.

MATERIAL AND METHODS

Specimens were collected by SCUBA diving at Ritchie's Archipelago, South Andaman and preserved in 70% ethanol following Breedy, 2001 . The specimens were identified based on the morphological characteristics of the colonies and sclerite structure. Sclerites were extracted using 5% Sodium hypochlorite (Bayer, 1961) and examined under the compound microscope (Labovision AXR 20), and underwater pictures were taken using Sony T900 camera.

RESULTS

During the survey in Ritchie's Archipelago two species (*Clavularia viridis* and *Briareum hamrum*) under two families (Briareidae and Clavulariidae) and two genera (*Clavularia*, *Briareum*) were reported; not recorded earlier in Indian waters. They were found mainly attached on rocky substrates at the depths between 5 to 20m in areas with strong currents or wave action. Microscopic

observation of the calcareous sclerites confirmed the novelty of the finding.

SYSTEMATIC POSITION

Phylum **:** Cnidaria Hatschek, 1888
Class : Anthozoa Ehrenberg, 1831
Order : Alcyonacea Lamouroux, 1816
Sub Order : Stolonifera Ryland, 1960
Family : Clavulariidae Hickson, 1894
Genus : *Clavularia* Blainville, 1830

1. **Species** : *Clavularia viridis* (Quoy and Gaimard, 1833) (Plate – 1)

Material Examined: 7211-ZSI/ANRC, colony encrusting form, calyx 5 µm; depth: 15 meter; Havelock wall (Lat. $12^0$03.334 N; Long. $92^0$57.716 E), Ritchie's Archipelago, South Andaman; Reef slope with high turbid water.

Description: Colony polyps green to brownish-grey and calyx and stolons greenish red in colour when alive. Encrust colonies are connected at the base by stolons or thin membranes. Size of the colony is covered more than one meter. The polyps are monomorphic and retractile, soft pinules that are closely arranged and give the tentacles a distinct feathery appearance.

Sclerites: The tentacle contains smooth to warty rods; the polyps usually have a strong points arrangement of long narrow spindles. The calyxes also have spindles that may be twice as long. The base stolons contain large warty and spiky, spindle like sclerites. Small capstans or 6-8 radiates present in Calyx and stolons. Sclerites are always colourless.

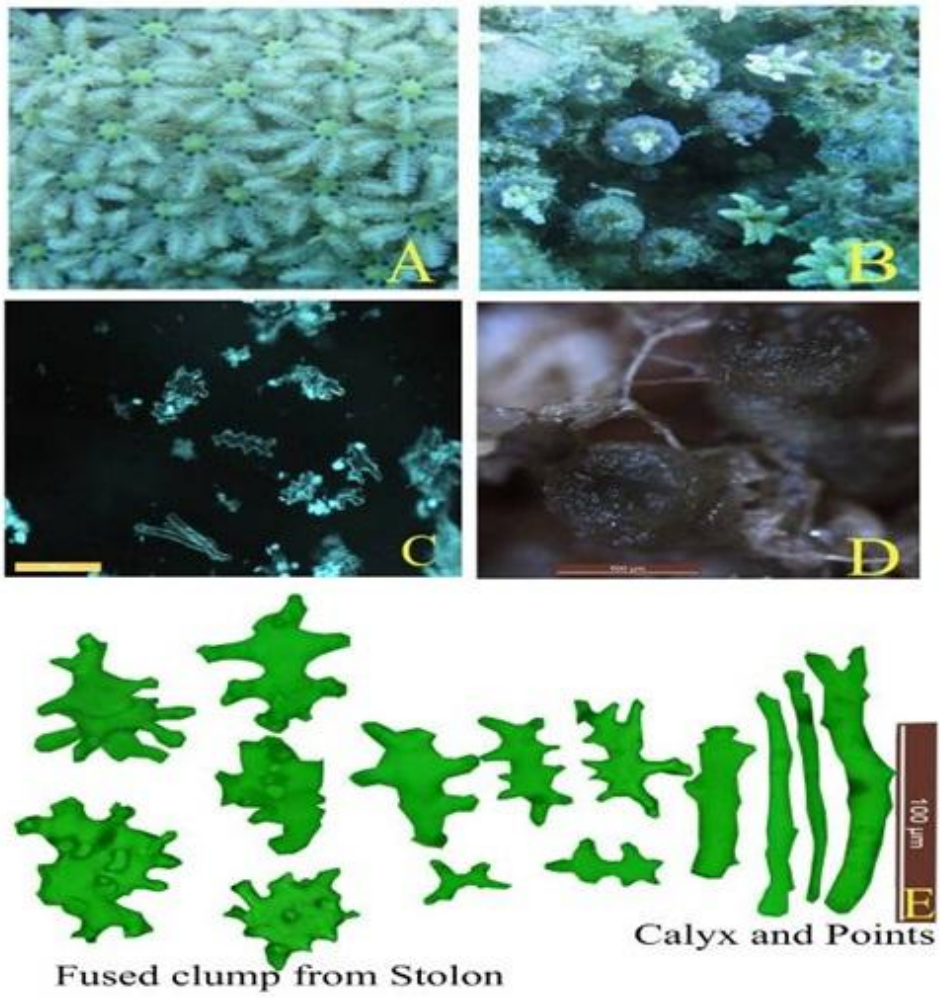
Depth range and Habitat: 10 - 20m depth; It was observed mostly in turbid environments and lower reef slope and bottom.

Distribution: Red Sea, South Africa, Korea, Palau, Guam, New Guinea, Great Barrier Reef, Indo-Pacific region, India: Andaman and Nicobar Islands.

Remark: New to India.

PLATE 1: A-Polyps are expanded; B-Visible stolons and calyx; C & D-Sclerites and Stolon under compound microscope (Leica-DFC500); E - Different types of sclerites with scale.

***Clavularia viridis* (Quoy & Gaimard, 1833)**



Sub Order : Scleraxonia Studer, 1887
Family : Briareidae Gray, 1859
Genus : Briareum Blainville, 1834

2. Species : *Briareum hamrum* (Gohar, 1948) (Plate – 2)

Material Examined: 7212-ZSI/ANRC, colony encrusting form, calyx 2 mm; depth: 15 meter; Havelock wall (Lat. $12^0$03.334 N; Long. $92^0$57.716 E), Ritchie's Archipelago, South Andaman. Reef slope with high turbid water.

Description: Colony form thin encrusting membranous sheets, small clusters of knob, tall finger like lobes or large tangles of cylindrical branches. Polyps are monomorphic, retractile and up to about 15mm tall. Live and preserved colonies are reddish-purple colour. The oral disk may protrude or it may be on the same level as the oral portion of the tentacle bases. Tentacles are variable in shape, ranging from thin to flatten.

Sclerites: In the surface of the colony there is a thin layer of short, narrow spindles. The all spindles and branched spindles have low or tall, spiny tubercles arranged in relatively distinct girdles and the multiple – branched, reticulate and fused forms generally have very tall, complex tubercles. The polyps and calyx have small spindles around the base where it merges with the calyx rim. Sclerites are pale to deep magenta and white.

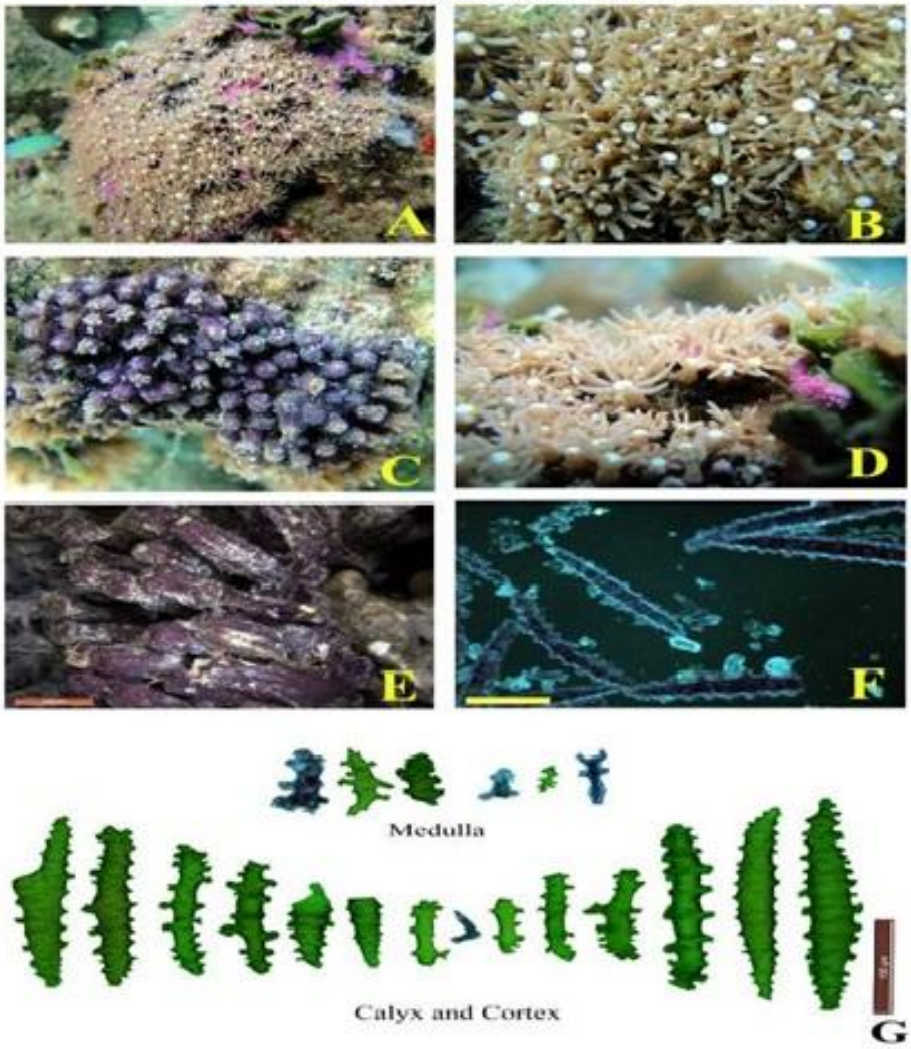
Depth range and Habitat: 10 - 20m depth; It was observed mostly in turbid environments and lower reef slope and bottom.

Distribution: Red Sea, East Africa, Indo-West-Pacific, including Australia, Indonesia, Micronesia, Taiwan, Bonin Islands, Caribbean. It also occurs in India: Andaman and Nicobar Islands.

Remark: New to India.

PLATE 2: A-Live colony; B&D-Polyps are expanded; C-Visible stolons and Calyx; E&F-Stolon and Sclerites under compound microscope (LEICA-DFC 500); G-Different types of Sclerites with scale.

***Briareum hamrum* (Gohar, 1948)**



ACKNOWLEDGEMENTS

The authors are thankful to the Department of Science & Technology, Science & Engineering Research Board for providing financial support and also thanks to the Ministry of Environment and Forests, Government of India for providing necessary permission for this study.

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