

## RESEARCH ARTICLE

### FIRST EVIDENCE OF AGGREGATING SEA ANEMONE, *ANTHOPLEURA ELEGANTISSIMA* (BRANDT, 1835) FROM THE SAURASHTRA COAST, GUJARAT

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#### ABSTRACT

This communication reports the first documentation of the Actiniarian, *Anthopleura elegantissima* (Brand, 1835) which was found at mid littoral zone of Vadodra jhala, Saurashtra coast of Gujarat. Till date there are no records available on this species and its aggregation form in Indian waters. Interestingly, this species of anemone *Anthopleura elegantissima* known particularly for its aggressiveness, also display acrorhagi on contact with members of the same or other species.

#### Keywords:

Actiniarian, Aggregation,  
Acrorhagi, Littoral zone.

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## INTRODUCTION

The exclusively solitary presence of sea anemone in their respective habitats is well established and has been understood in major reference works (Francis, 1988; Shick, 1991). However, anemones also form large colonies which are tightly packed together and are known as aggregating or colonial form of anemones. *Anthopleura elegantissima* is the member of most widely distributed and largest family, Actiniidae (Ford, 1964). It is described as occurring in two forms, solitary and aggregating which may be found in somewhat different microhabitat (Francis, 1979). Aggregating form of anemone is commonly found in exposed position on open rock surfaces in the mid littoral zone as it is more tolerant to wave action, desiccation and temperature extremes. Distribution pattern for such zooxanthellae hosted anemone has been recorded from west coast of Canada (Bates et al., 2010). While the biogeography (LaJeunesse and Trench, 2000) and aggressions (Ayre and Grosberg, 1995) were studied from California. No such records were found in the literature in Indian context.

## MATERIALS AND METHODS

Survey was carried out at Saurashtra coast of Gujarat, in order to investigate and documentation of Anthozoan diversity.

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The organisms were photographed in situ using digital camera before collection and the images were used to characterize external morphological characters. Specimens of the organisms were collected and preserved using proper techniques for further studies. Geo-locations were noted down using in built GPS device in the camera.

## RESULTS AND DISCUSSION

### Systematics

Phylum: Cnidaria  
Class: Anthozoa  
Order: Actinaria (Haeckel, 1896)  
Family: Actinidae (Rafinesque, 1815)  
Genus: *Anthopleura* (Fonbressin & Michelotti, 1860)  
Species: *Anthopleura elegantissima* (Brandt, 1835)

During the survey of Anthozoan diversity, we have observed aggregating sea anemone, *Anthopleura elegantissima* (Brand, 1935) at the coast of Vadodra Jhala (Latitude: 20°48' 47.55"N, Longitude: 70°31' 14.37"E), Gir Somnath district, Gujarat (Fig.1). Individuals of aggregating form were observed less than 3.5cm across the oral disk (Fig. 2(A)). Inter-clonal interactions among sessile and clonal anemones, often involves aggression, which entrails the deployment of specialized structures (e.g., acrorhagi, catch tentacles) that are heavily



Fig. 1. Map of surveyed intertidal area of Vadodra Jhala coast

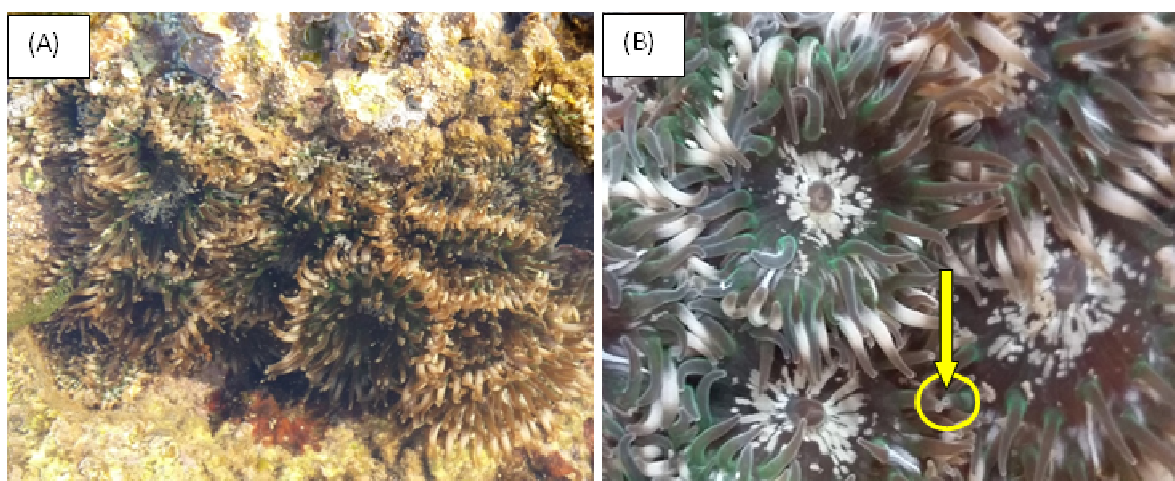


Fig. 2(A) Aggregating form of *Anthopleura elegantissima* (B) inflated acrorhagus

armed with batteries of penetrant, toxic nematocyst (Ford, 1964). This species has a ring of white knobs, called acrorhagia, just outside their ring of tentacles. The acrorhagia are loaded with stinging cells and are used for fighting other anemones. (Fig: 2(B)). Oral disc is olive green in colour with radiating stripes. Column is pale grey-green to white and twice as long as width when completely extended. It is covered with vertical rows of adhesive tubercles called verrucae. Tentacles are variously coloured mainly with grey and white while the tips are of olive green colour which are visible as a central ring when the tentacles are retracted, and the tentacles which are numerous, thick and pointed are arranged in 5 rings around the oral disk. Along the exposed rocky shores of the coast, the sea anemones form dense clonal aggregations in the mid littoral zone. *A. elegantissima* lives on the rocky substratum; thus local topography and other physical features of the habitat proximally constrain the size, shape and continuity of aggregations.

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