

First Record of Regular Sea Urchin *Salmacis virgulata* (L. Agassiz and Desor 1846) from the Pondicherry Coast, India

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Abstract: The paper reported the first record of Regular sea urchin *Salmacis virgulata* (L. Agassiz and Desor 1846) in the Pondicherry coast, India. Three adult specimens were found in Kalapet region of Pondicherry coast, India in May 2010. It is a characteristic organism of the Echinoderm fauna of the Bay of Bengal and the description of the organism are provided.

Key words: Bay of Bengal % Echinoderm % Sea urchin % Pondicherry

INTRODUCTION

Sea urchin is one of the most common components of near shore marine ecosystem worldwide, often playing an important ecological role in shallow subtidal environments [1]. Despite it being the most abundant species of sea urchin of the Bay of Bengal, little quantitative information has been gathered on key aspects of its biology and ecology.

Three adult specimens of *Salmacis virgulata* (L. Agassiz and Desor 1846) were collected by hand in Kalapet region of Pondicherry coast in summer season of 2010, preserved in 5 % buffered formalin-seawater mixture [2]. Specimens were identified to the lowest practical taxonomic level using on monograph of shallow water Indo-West Pacific echinoderms [3] and deposited in the Pondicherry University, University Grants Commission Major Research Project -02.

***Salmacis Virgulata* L. Agassiz and Desor 1846 (Fig. 1):** *Salmacis virgulata* L. Agassiz and Desor, 1846, p. 359: Sri Lanka; A. M. Clark and Rowe, 1971, pp. 140, 156: Sri Lanka, Bay of Bengal, East Indies, Philippines; James, 1986, p. 583: Gulf of Mannar and Palk Bay on the Indian side; Srilanka.

Material: The three specimens found in India, Kalapet beach, Pondicherry coast. Collected P. Satheeshkumar, 12th May 2010 dated 12.02.2010 (PUUGCMRP -02)

Key to the Genera of the Family: Primary tubercles distinctly crenulated; coronal plates with small sutural pits or none (*Salmacis* L. Agassiz, 1841)

Key to the Species Identification: Primary spines not banded; colours diverse base and tip often different; coronal plates separated from each other only by sutures, the edge of which may be slightly beveled.

Description of the Species: The shape of the test is not globular like *S. bicolor*. Temnopleurid with shallow gill slits, test plates with sutural pores, primary tubercles crenulated but not perforated. Spines are violet in colour (Fig. 1.1). It has a peculiar habit of attaching bits of shells and other materials to tube feet. This is mainly meant for protection against light.

Colour: Violet colour

Distribution: This is a widely distributed Madagascar and India. It occurs from China and South Japan, along the coast of Asia and Philippines [3].

Habitat: Sea urchin is a spiny, hard-shelled animal that lives on the rocky seafloor, from shallow waters to great depths. These globular marine invertebrates move very slowly along the seabed. This species occurs on continental shelf along the upper limit of the intertidal zone.



Fig. 1: Morphology of *Salmacis virgulata* (Photograph by P. Satheeshkumar)



Fig. 1.1: Characteristic of violet colour spines of *Salmacis virgulata* (Photograph by P. Satheeshkumar)

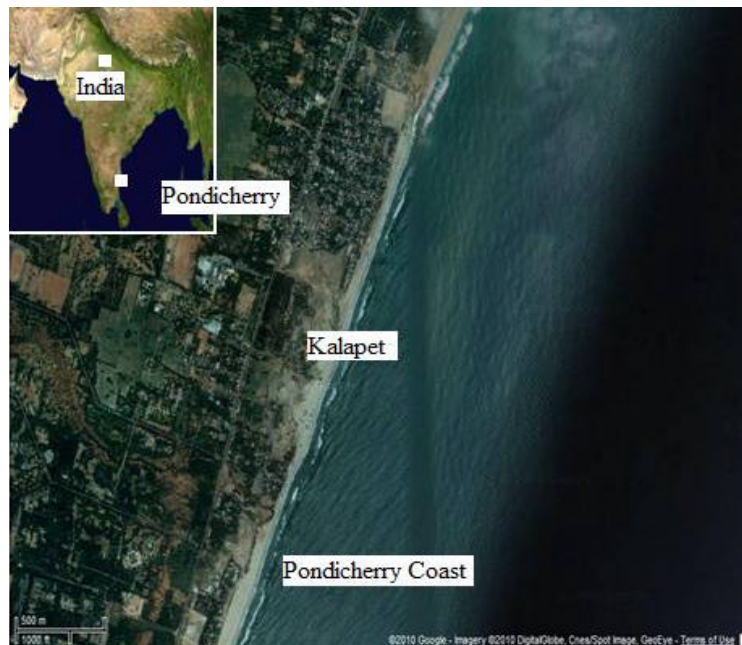


Fig. 2: Study site of Pondicherry coast, India

Feeding: Urchin grazing may precipitate aggregations of sea stars and other predators or scavengers by incidentally consuming or damaging mussels and other small invertebrates.

Remarks: Echinoderms are a fascinating group of animals. They are exclusively marine and occur in every habitat from the intertidal zone to the bottom of deep sea trenches. Based on the morphology of regular sea urchin, anus is aboral in position, within the apical system, mouth in the centre of the oral surface, test usually circular in outline, sometimes oval, spines bristling and erect. *S. virgulata* have larger size, total length 40-65 mm, the length of spines of the “equatorial” row reaches 3-7 mm. Some spines are not pointed as their ends are broken off and consequently are shorter. Despite further attempts no more specimens could be collected.

Geographically the coast of Pondicherry lies within the boundaries of latitudes 11°46'03” to 11°53'40” North and longitudes 79°49'45” to 79°48'00” East (Fig. 2). The present record of *Salmacis virgulata* is the first report from Kalapet beach, southeast coast of India. Pondicherry coastal area is polluted due to the discharge of industrial, domestic and agricultural wastes through small tributaries and channels into the Bay of Bengal [4]. In addition the study area Kalapet of Pondicherry coast has natural environmental handicaps which result from its isolated position and various manmade stresses are considered to be mainly responsible for a decline of sea urchin. Further study on echinoderms of shallow water are necessary should be done in terms of monographic works and marine scientists should be encouraged to study the other aspects on this animal.

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