

First Record of Three Jellyfish Species from West Coast of Sri Lanka Based on Taxonomic Identification

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Abstract

Jellyfish, which belong to phylum Cnidaria, play a multifaceted role in pelagic marine environment being a prey of some species; predator on the larval stages of economically important species; famous delicacy in some countries; harmful species for fishing gear operation and tourism, and even a biological indicator on global warming. Global understanding on jellyfish diversity, which is the fundamental measurement in understanding their ecology, is limited and so far only couple of Jellyfish studies had been conducted in Sri Lankan waters. Therefore, this pilot study conducted from July to December 2016 in coastal waters of Negombo, Wennappuwa, Chilaw and Puttalam to identify jellyfish species taxonomically. Samples were collected by beach seines and trammel nets. Both live and preserved samples, using 5% formalin, were taken to the laboratory at Wayamba University of Sri Lanka for taxonomic identification using guides and keys. Three species, *Acromitus flagellates* Mass, (1903); *Rhopilema hispidum* Vanhoffen, (1888) and *Chiropsoides quadrigatus* Muller, (1859) which identified in this study have not been recorded before from Sri Lankan waters (respectively “a”, “c” and “e” in plate 1). The *A. flagellates* and *R. hispidum* were collected from Negombo and Puttalam coasts respectively while *C. quadrigatus* collected from Wennappuwa and Chilaw. Among the three species *C. quadrigatus* was the smallest of having around 100mm bell height, followed by *A. flagellates* and *R. hispidum* having respective mean bell diameter of 120mm and 230mm. Uniqueness in smooth exumbrella, eight inter-rhopalar canals link only with the ring canal, intra-circular network of anastomosing canals communicate with the ring canal and the rhopalar canals only, each mouth-arm typically with a terminal whip-like appendage, subgenital papillae typically heart shape were used in identifying *Acromitus flagellates*. Eight oblong, rounded velar lappets per octant, absence of ring canal and club-shaped appendages on mouth arms are used in defining *R. hispidum*. Strongly cuboid umbrella, presence of four interradial clusters of tentacles on pedalia and presence of short comb-shaped gastric saccules were used in defining *C. quadrigatus* (Plate 1). Among the three jellyfish species, *R. hispidum*, which

commercially called flower jellyfish or sand type, has the high edible value and well establish fishery for this species have been reported from Pakistan, Vietnam and Indonesia while *C. quadrigatus*, which is a venomous jellyfish species has a pharmaceutical value in extracting the venom. Three species reported form this study will add important inventory for Sri Lankan jellyfish taxa and further investigations on abundance and biomass estimation of *R. hispidum* and *C. quadrigatus* is essential in establishing any related industries.

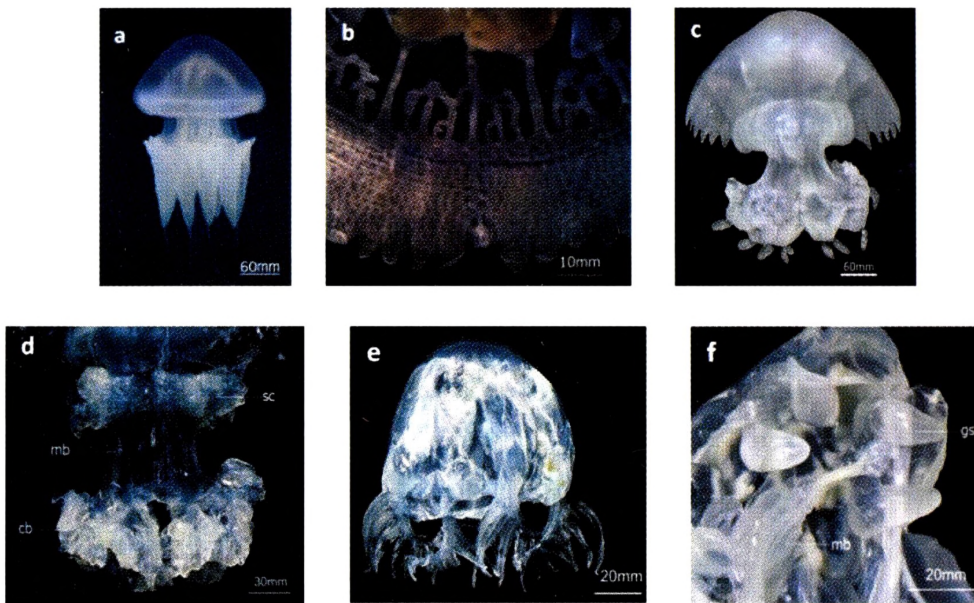


Plate 1: Three jellyfish species: *Acromitus flagellatus* (a) and its canal system (b); lateral view of *Rhopilema hispidum* (c) and its distal end (d) showing Scapulates (sc), Manubrium (mb), Clubs on oral arms (cb); and the lateral view of *Chiropsoides quadrigatus* (e) and its subumbrella view showing gastric sacculles (gs) and Manubrium (mb).

Keywords: Jellyfish; Morphology; New records; Sri Lankan coast

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