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ADDITIONS TO THE SCYPHOMEDUSAE (CNIDARIA: SCYPHOZOA) OF PAKISTAN

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ABSTRACT

This study presents first records of three species of scyphozoan jellyfishes *Chrysaora hysoscella*, *Chrysaora* cf. *kynthia* and *Lychnorhiza malayensis* from Pakistani coast based upon specimens obtained from trawl by-catch. No species from these genera were previously known from the region.

Key words: Jellyfish, Scyphozoa, *Chrysaora*, *Lychnorhiza*, Pakistan

INTRODUCTION

Scyphomedusae of Pakistan though, currently represented by nine species (see Gul *et al*., 2015) comprise a neglected group of marine invertebrate fauna in the region; no detail study on their biodiversity and Systematics has ever been made. Here, we add first records of three species of scyphozoan jellyfishes *Chrysaora hysoscella*, *Chrysaora* cf. *kynthia* and *Lychnorhiza malayensis* based upon specimens collected from trawl by-catch, during surveys of the off shore fisheries resources of Pakistan using FAO/NORAD Research Vessel 'Dr Fridtjof Nansen' (Fanning *et al*., 2011) and from trash at Karachi Fish Harbour (Fig. 1). The FAO collection was studied, photographed and deposited in the Marine Fisheries Department, Karachi, while the jellyfish from Harbour was examined and deposited in the Museum of Department of Zoology, Jamia Millia Government Degree College Malir, Karachi (MDZ JMGDC). The specimens were in poor condition and difficult to deal with taxonomically but in the present state of knowledge could not be ignored and hence, are presented here. Identification of specimens followed Kramp (1961) and Morandini and Marques (2010).

Systematics
Class Scyphozoa Goette, 1887
Subclass Discomedusae Haeckel, 1880
Order Semaeostomeae L. Agassiz, 1862
Family Pelagiidae Gegenbaur, 1856
Genus *Chrysaora* Péron & Lesueur, 1810
***Chrysaora hysoscella* (Linnaeus, 1767)**
(Fig. 1A)

Material examined. FAO collection, 3 specimens, bell diameter 150-160 mm.
Remarks. Commonly known as compass jellyfish, can be easily recognized by unique colour pattern of exumbrella bearing sixteen dark, usually brown V-shaped radiating stripes or triangular markings resembling isosceles triangles which caused the species named *hysoscella* (Brown, 1956). The species has hemispherical umbrella, 150-250 mm diameter, finely granulated exumbrellar surface, 32 rounded colourless or brown marginal lappets and 24 tentacles. According to Morandini and Marques (2010), it occurs in the Eastern North Atlantic (North Sea, English Channel and Mediterranean Sea) while, Cornelius (2004) questionably mentioned the species as cosmopolitan. Recently, it has been studied for biochemical properties in Iran, Persian Gulf (Gharibi, 2016).

***Chrysaora* cf. *kynthia* Gershwin and Zeidler, 2008**
(Fig. 1B)

Material examined. Karachi Fish Harbour, 18 August 2016, 1 specimen, bell diameter 110 mm, MDZ JMGDC CN 24.

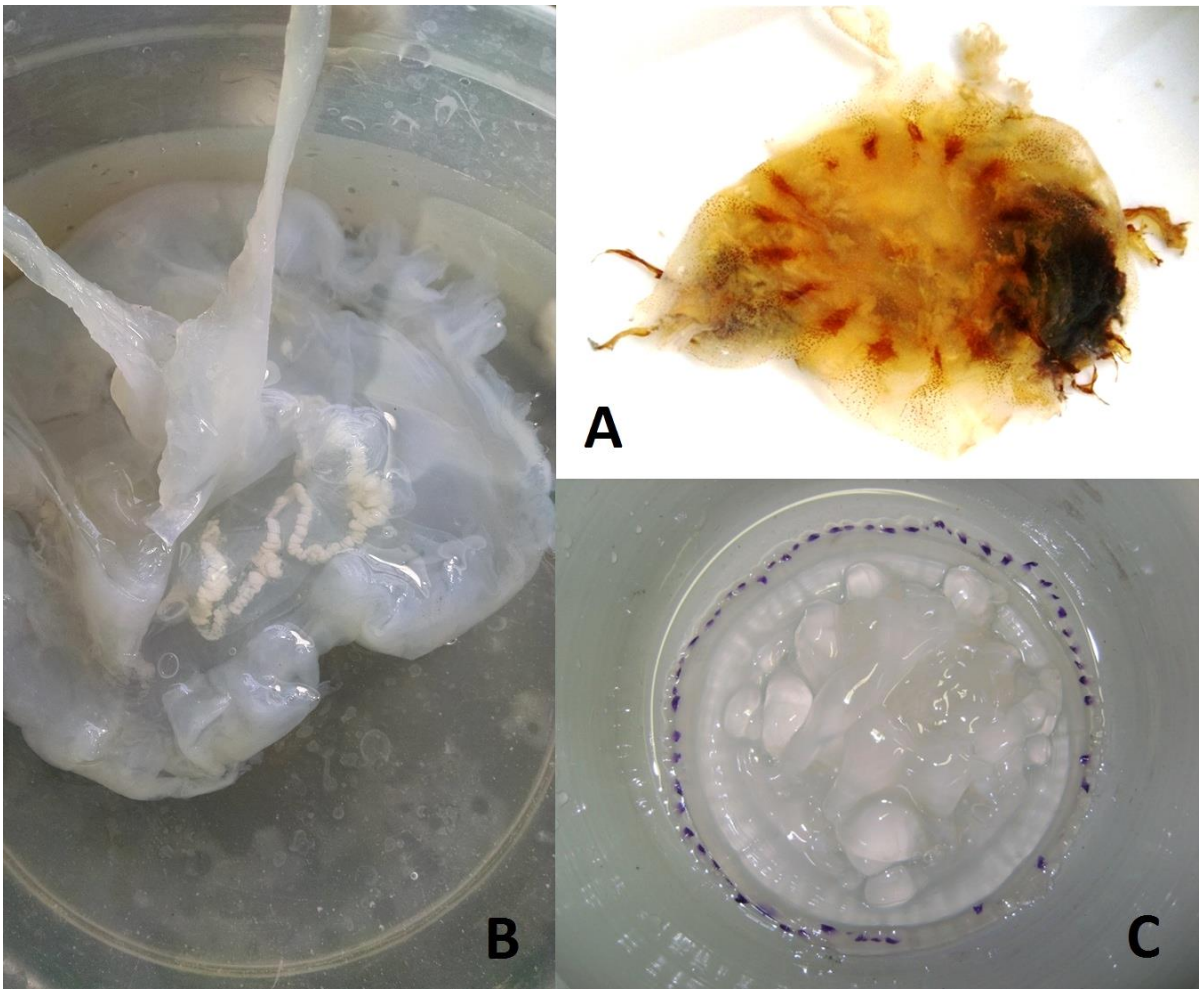

Fig. 1. Scyphomedusae from Pakistani coast. A) *Chrysaora hysoscella* (Linnaeus, 1767); B) *Chrysaora* cf. *kynthia* Gershwin & Zeidler, 2008; C) *Lychnorhiza malayensis* Stiasny, 1920.

Remarks. Morphology of the given specimen agrees with Gershwin and Zeidler's (2008) description, having unpigmented, translucent umbrella, marginal lappets rounded, 4 per octant, tentacles 3 per octant and gonads inverted W-shaped. However, the species so far, known from Southwestern Australia has been considered nomen dubium due to insufficient description of holotype (Morandini and Marques, 2010; Collins, 2017).

Order Rhizostomeae Cuvier, 1800
Family Lychnorhizidae Haeckel, 1880
Genus *Lychnorhiza* Haeckel, 1880
***Lychnorhiza malayensis* Stiasny, 1920**
(Fig. 1C)

Material examined. FAO collection, 11 June 2010, 1 specimen, bell diameter 110 mm.
Remarks. The specimen has distinct 4-5 different sizes blind centripetal canals between adjacent radial canals (see Stiasny, 1921, fig. 9) and exumbrella smooth bearing 8 marginal lappets per octant; tips of lappets tint with blue. According to Kramp (1961), mouth, arms of this jellyfish lacks any appendages. In a recent report from India (Jeyabaskaran, 2016), live specimen of this species has been reported probably for the first time in the literature. This is an Indo-west Pacific species described from Malay Archipelago; most records are from India (Kramp, 1970).

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