

SHORT COMMUNICATION

FIRST OCCURRENCE OF *PLEUROBRACHIA PILEUS* (O. F. MÜLLER, 1776) AND SIGHTING RECORDS OF FOUR OTHER SPECIES OF COMB JELLIES (CTENOPHORA) FROM THE COAST OF PAKISTAN (NORTHERN ARABIAN SEA) : A BRIEF ACCOUNT

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ABSTRACT

This study reports five species of comb jellies from the coast of Pakistan for the first time. Four species were recorded from Charna Island during underwater photography by the local recreational scuba divers while, one species was collected in large numbers during early summer from Manora beach. Previously, only two species were known from Pakistani waters thus, this attempt will improve the knowledge of the group in this area.

Key words: Ctenophora, *Leucothea*, *Cestum*, *Beroe*, *Pleurobrachia*, northern Arabian Sea

Comb jellies are marine gelatinous metazoans of the phylum Ctenophora Eschscholtz, 1829. All ctenophores are planktonic except order Platyctenida, which includes benthic forms with planktonic larvae. According to Mills (1998-2017), there are about 150 to 200 described species of comb jellies worldwide. From the coast of Pakistan, current data on taxonomic diversity of ctenophores is however, obscure; only two species are known, *Bolinopsis infundibulum* (O. F. Müller, 1776) and *Ocyropsis maculata* (Rang, 1828) reported recently from Charna Island (Gul and Oliveira, 2015). These records were obtained from the *in situ* photographic data of local recreational scuba divers and also posted on their websites. Later on, further investigation through this data provided additional records of comb jellies from the same location, Charna Island (24° 53' 51.36" N, 66° 36' 8.71" E) and are presented here.

Sampling of ctenophores is generally challenging and being fragile, they offer great difficulty in preservation; preserved specimens often loose body shape, so images of live specimens are much helpful particularly, in case of relatively known species. Following four species, one specimen of each was sighted and documented in photographs from 2011 to 2015.

Leucothea multicornis (Quoy & Gaimard, 1824) (order Lobata): large oral lobes and very long serpentine shape auricles, oral lobes bearing substomodeal meridional canals arrange in meander like manner, primary tentacles and tentilla long; surface of body covered with tiny papillae (Fig. 1A, B).

Cestum veneris Lesueur, 1813 (order Cestida): long, flat, ribbon like transparent body violet along edges, origin of subtentacular meridional canals close to the base of stomodaeum which form curves and run in the midline (Fig. 1C).

Beroe cucumis Fabricius, 1780 (order Beroida): long-oval translucent body slightly pink along ciliary comb rows, three times longer than width, round at the aboral part and narrow towards oral region having diverticulae of meridional canals free/without anastomoses (Fig. 1D, E).

Beroe forskalii Milne Edwards, 1841 (order Beroida): pink body pointed at the aboral end and bearing wide mouth expanded on entire oral cavity whereas, diverticulae forming characteristic anastomoses (Fig. 1F).

In addition, during a routine field visit to Manora (24° 48'11.159" N, 66° 57'34.616" E), Karachi, large numbers of *Pleurobrachia pileus* (O. F. Müller, 1776) (order Cydippida) commonly known as sea goose berries were observed in the early summer on 24 February 2019 washed ashore along with small numbers of hydromedusae, *Liriope tetraphylla* (Chamisso & Eysenhardt, 1821) and unidentified *Aequorea* species; seventy specimens of *P. pileus* were collected and preserved in 5% formaldehyde solution. They were dead with yellow tentacles retracted in the tentacle sheaths. Though seasonal appearance of sea goose berries in swarms is a well-known phenomenon, literature revealed little information on their occurrence in the Arabian Sea and the only species found reported was *Pleurobrachia globosa* Moser, 1903 documented from Goa, Western coast of India (Goswami, 1982).

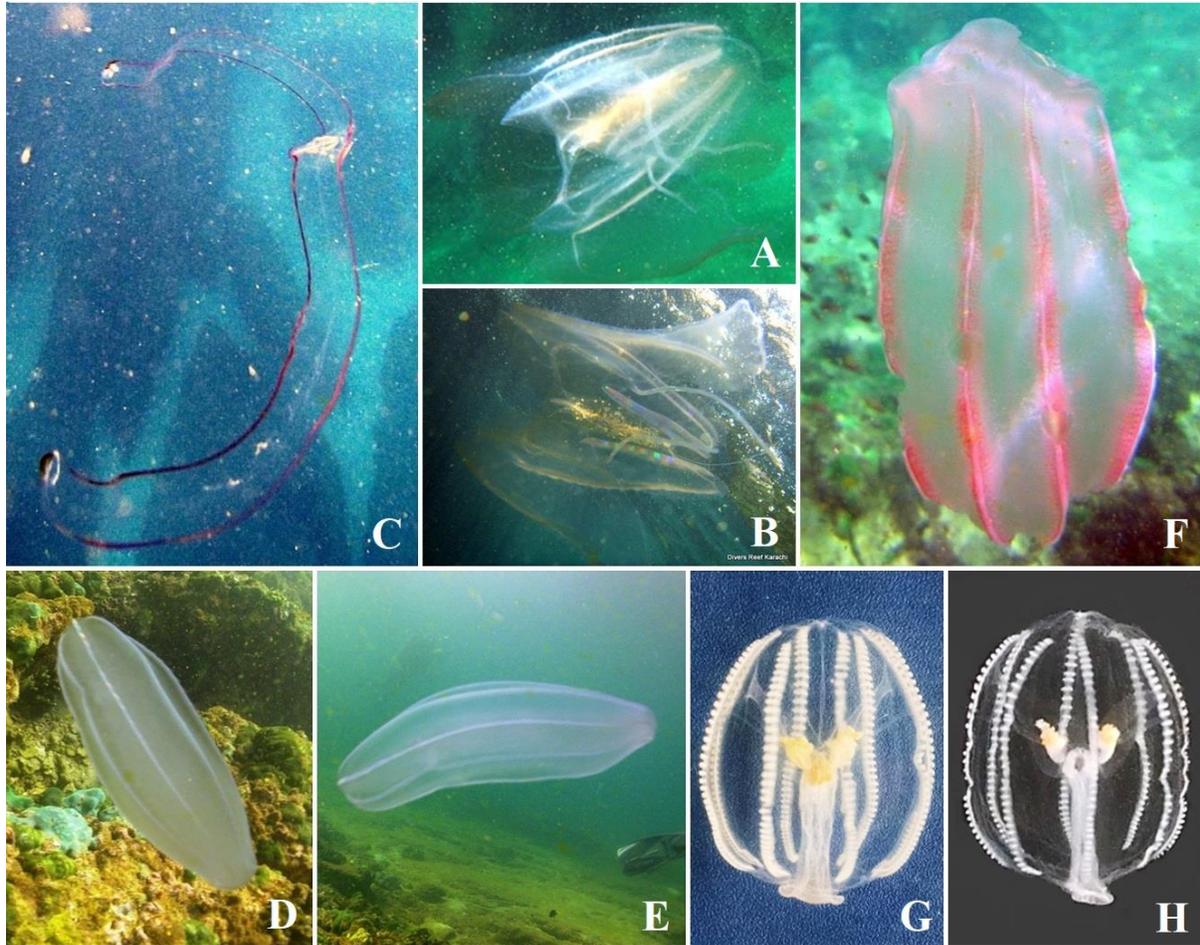


Fig. 1. Comb jellies from the coast of Pakistan: A, B) *Leucothea multicornis* (Quoy & Gaimard, 1824); C) *Cestum veneris* Lesueur, 1813; D, E) *Beroe cucumis* Fabricius, 1780; F) *Beroe forskalii* Milne Edwards, 1841; G, H) *Pleurobrachia pileus* Fleming, 1822, two specimens in close up. Photos: A, B, C, Divers Reef Karachi; D, E, Karachi Scuba Diving Centre; F, Scuba Club.

The collected specimens of *P. pileus* were 0.8 to 17 mm long, oval to spherical shape with ciliary comb plates on more than 3/4 of the body length, adradial canal opening at meridional canal upper than infundibulum and below tentacle sheath, and stomodeum half or more than the body-length (Fig. 1G, H).

Literature used for identification of all five species reported here include Mayer (1912); Mianzan (1999); Mills and Haddock (2007); Shiganova and Malej (2009) and Licandro and Lindsay (2017). Present state of knowledge about the occurrence of these comb jellies in the Indian Ocean is not clear which indicates that the species reported in this study are possibly new to the Arabian Sea and first records from the coast of Pakistan.

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