

## The first record of bobtail squid, *Euprymna hyllebergi* Nateewathana, 1997 (Cephalopoda:Sepiolidae) from the Persian Gulf, Iran

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The family Sepiolidae comprises over 50 species in 14 genera. They are commonly known as bobtail squids with a worldwide distribution from tropical to temperate and sub-polar latitudes of all oceans (Nateewathana, 1997; Aungtonya *et al.*, 2011).

*Euprymna hyllebergi* belongs to the Sepiolidae family and Sepiolinae subfamily. This species has a wide distribution in the Eastern Indian Ocean, and has been recorded up to the depth of 47 meters in Andaman Sea, Thailand (Jereb and Roper, 2005). The family Sepiolidae, includes all bobtail squids with kidney-shape fins little is known about

their biology, but they are common in tropical, temperate and sub polar waters of all oceans (Jereb and Roper, 2010). This is the first record of the bobtail squid, *E. hyllebergi* from the Persian Gulf. On 27<sup>th</sup> of March 2013 during a Scuba diving session in Persian Gulf (Figure 1, coordinates: 54° 49'39.5"E, 26° 26' 55.3"N) about 200 eggs of *E.hyllebergi* were collected at the depth of 40 meters in northern Persian Gulf. The eggs (Fig. 2a) were transferred to the Persian Gulf Shellfishes Research Center laboratory for further incubation and hatching. The eggs were lemon shape, 2.5 to 4.0 mm in diameter, pale brown and gathered in

clumps. They hatched after 11 days *in vitro*. The mantle length and the total wet body weight of each individual were measured and recorded in the laboratory to the nearest mm and g, respectively.

Two major bobtail squids (Fig. 2b) were selected for identification and

morphometric measurements were taken using a dial caliper with an accuracy of 0.02 mm. The data were taken, and recorded based on Nateewathana (1997), Nateewathana *et al.* (2001) and Aungtonya *et al.* (2011).



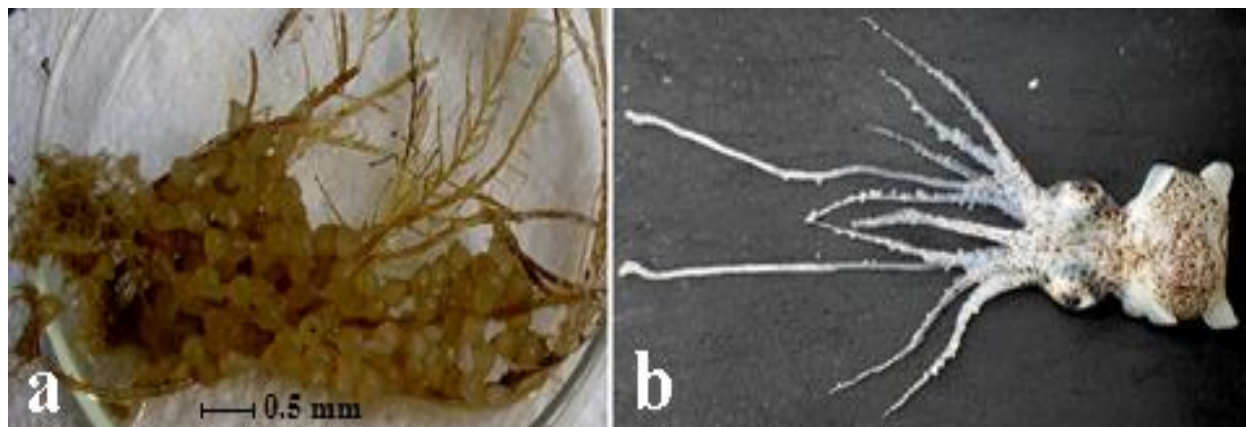
**Figure1:** Map of sampling location in the northern Persian Gulf.

This study presents the first record of bobtail squids in the Persian Gulf. The *E. hyllebergi* was not included in the list of Cephalopods reported from the Persian Gulf basin (Valinassab, 1993; Jereb and

Roper, 2005). Morphometric characteristics of two specimens of *E. hyllebergi* (13.4 and 11.9 mm Mantle Length) are presented in Table 1.

**Table 1:** Morphometric characteristics of two *E. hyllebergi* specimens in the Persian Gulf with a comparison with available literature.

| Measurement (mm)   | Specimen 1<br>mm (%ML) | Specimen 2<br>mm (%ML) | Nateewathana<br><i>et al.</i> (2001)<br>mm (%ML) |
|--------------------|------------------------|------------------------|--|
| Mantle Length (ML) | 13.4                   | 11.9                   | 19.4   |
| Mantle width       | 12.1                   | 9.9                    | (76.5)   |
| Fin length         | 4.40 (32.83)           | 3.38 (28.49)           | (53.7)   |
| Fin width          | 14.18 (105.82)         | 13.36 (112.64)         | (146.8)  |
| Fin base           | 4.04 (30.14)           | 3.60 (30.35)           | (44.7)   |
| Head length        | 6.5 (48.5)             | 4.8 (40.64)            | (51.8)   |
| Head width         | 6.38 (47.61)           | 5.24 (44.18)           | (70.0)   |
| Tentacle length    | 25.9 (193.28)          | 16.8 (141.98)          | (66.9)   |
| Club length        | 3.82 (28.5)            | 1.78 (15)              | (90.4)   |
| Arm length         | 14.58 (108.8)          | 8.34 (70.32)           | (76.8)   |
| Eye diameter       | 5.36 (40)              | 4.42 (37.26)           | (46.2)   |
| Lens diameter      | 2.24 (16.71)           | 1.58 (13.32)           | (16.3)   |



**Figure 2a: Eggs of *E. hillebergi* collected from the Persian Gulf, b: Specimen of *E. hillebergi* (ML= 13.4 mm).**

Morphometric measurements in these specimens are consistent with those in studies of Nateewathana (1997), Nateewathana *et al.* (2001) and Aungtonya *et al.* (2011). Mantle is short and rounded, dorsal mantle fused to head. Fins are short, arms are thick and short, and arm suckers are tetraserial. Tentacular club suckers indistinct and hardly visible. Cuttlebone, in dorsal mantle is wide and synthesizes  $\text{CaCO}_3$ . Studies in the laboratory indicated that *E. hillebergi* grow and mature within 100 to 140 days following hatching. *E. hillebergi* is a semelparous species and has a short life cycle (Unpublished data).

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