Observation on juvenile sea cucumber occurrence in the shallow waters of Hare Island (erstwhile Pandian Island), Tuticorin

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Understanding juvenile sea cucumber habitat preferences is very much essential for determining the carrying capacity of a given habitat which enables the successful release of sea cucumber juveniles for restocking purpose. Holothurians occupy different habitats such as rocky shores, sandy beaches, muddy flats, coral reefs and mangrove swamps at different depths. In general, the juvenile sea cucumbers exist in the habitat occupied by the adult but are obscured from view within the sediment or crevices or beneath obscuring objects such as corals and rocks. Juveniles of 21 species of holothurians have already been reported from Indian waters, of which 17 were observed in the same habitat as adults and 4 in the absence of adult.

There are no reports on the availability of sea cucumber juveniles from Tuticorin waters. While doing the routine observations on sea cucumber species diversity in the shallow waters of Hare Island (erstwhile Pandian Island), juvenile sea cucumbers of three species were noticed under rocks (Fig. 1). They were found attached firmly to the rock surface

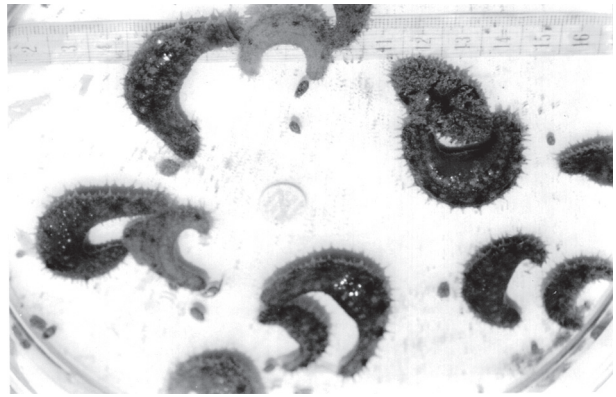

Fig. 1. Sea cucumber juveniles collected from Hare Island

and were covered with sand and extraneous particles concealing their presence from the surroundings.

After noting the morphological characters of the collected holothurian juveniles, spicules were separated from various parts of the body like dorsal as well as ventral tegument, tentacles, podia and pedicels using sodium hypochlorite. The isolated spicules were measured and photographed under microscope, for species identification. The juvenile

sea cucumbers collected were identified belonging to three species *viz., Holothuria cinerascens, Holothuria moebii* and *Holothuria paradalis.* The details of juveniles collected, their morphology and spicule characteristics are given in Table 1.

The general morphological features and the spicule structures of all three species of juvenile sea cucumbers are similar to their adults but with minor variations. The juvenile *H. cinerascens* have beautiful colouration with yellowish green or reddish green papillae and pedicels which were scattered all over the body, such characters are absent in the adults and the adults are reddish brown in colour with red markings in the body. The juveniles have only tables as spicule in the tegument, while adults have tables, rods and plates as spicules in the teguments.

The juveniles of *H. moebii* have three distinct rows of yellowish white pedicels, but adults have four rows of pedicels, which are darker on the dorsal side and lighter on the ventral side. Spicules like buttons are absent in the juvenile *H. moebii,* where as it is the major constituent in adults. The adult *H. pardalis* is light brown in colour with dark patches and have 8 - 15 pairs of brown spots on the dorsal side, whereas juveniles are whitish transparent with yellowish white pedicels arranged in three rows on the ventral side and have nine brown spots in three rows on the dorsal side. The characteristic curved rod spicules, which are present in the adults are absent in the juveniles.

The adult specimens of both *H. cinerascens* and *H. moebii* are two common species of the shallow waters of Hare Island, usually found attached to rocks but *H. pardalis* is a rare species and hence more studies have to be conducted to explore the habitat preference of both adults and juveniles of this species in the Gulf of Mannar area.

Table 1. Details of sea cucumber juveniles collected from Hare Island, Tuticorin

Place	No. of specimens	Morphology	Spicules and measurements	Systematics
Hare Island	15 Nos.	Brownish black coloured body with 9 nos. of orange or brownish black spots on the dorsal side. Pedicels arranged in three rows which are sticky yellowish green coloured or sometimes red or green. Tentacles are reddish brown in colour. Length - 2.4 – 8 cm Wet weight – 3.24 -10 g	Table - (base = 0.04-0.055 mm, spire = 0.045 - .058 mm) Rods - 0.05 - 0.12 mm, Endplate - 0.2 - 0.37 mm, Tegument contains only tables. Pedicels and tentacles have rods and end plates.	Order : Aspidochirota, Family : Holothuroidea Genus : *Holothuria* Subgenus: *Semperothuria* Species : *cinerascens*
Hare Island	18 Nos.	Spindle shaped elongated body with 9 brown spots in three rows on the dorsal side. Pale whitish transparent body with yellowish white pedicels arranged in three rows on the ventral side. Tentacles are transparent light brown in colour. Small juveniles are highly transparent with two brown spots. Length - 1.6 - 7.2 cm Wet weight - 0.34 – 4.18 g	Tables - (base = 0.05 - 0.0825 mm) spire = 0.0425 - .0775 mm Rods - 0.08 - 0.13 mm Button - 0.05 - 0.125 End plate - 0.35 - 0.4 mm	Order : Aspidochirota Family : Holothuroidea Genus : *Holothuria* Subgenus: *Lessonothuria* Species : *pardalis*
Hare Island	9 Nos.	Dark brown spindle shaped body with brown pedicels arranged in three rows. Podia are scattered but sticky. Very small juveniles are highly transparent without any spots. Length - 2.1 - 11 cm Wet weight - 4.4 - 6.05 g	Rods - 0.06 - 0.2 mm End plate - 0.1 - 0.17 mm	Order : Aspidochirota Family : Holothuroidea Genus : *Holothuria* Subgenus: *Selenkothuria* Species : *moebii*