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## Information on juvenile holothurians: A contribution by Dr D.B. James

*As communicated by Glenn Shiell*

Following a request for anecdotal information on the habitat preferences of juvenile holothurians (see Beche-de-Mer Information Bulletin #19), issue #20 included a short article entitled, “Field observations of juvenile sea cucumbers”. The aim of the article was to consolidate observations of juveniles in their natural environment and identify differences in habitat preferences between adult and juvenile holothurians. By consolidating this information, the article ultimately aimed to identify juvenile ecology research directions and to clarify some of the details of the little-known but important juvenile life phase. At the time of writing the article, I had received 26 responses covering 18 different species.

However, since that time, I have received further information from Dr D.B. James of India. Given the range of species covered in his list of observations (many of which were not included in the previous article), and the extensive time frame over which these observations were made, it seemed appropriate to include the observations in this issue as a follow up to that published in the previous issue.

In his list, Dr James includes 21 holothurian species (see Table 1). Of these, 17 were observed concur-

rently in the same habitat as adults, and 4 in the absence of adults. These observations again reflect the patterns identified in the article published in issue #20. In examples provided by Dr James, there appears, in most cases, to be a close association between the habitat preferences of adult and juvenile holothurians of the same species. However, Dr James also provides evidence to suggest that juveniles of selected species may occupy different habitats to that of the adult form. This trend, which is now reported in a number of species (*Holothuria fuscogilva*; *H. whitmaei* [previously *H. nobilis*]; *Cucumaria frondosa* and *Stichopus hermanni* — see issue #20 for corresponding references), requires further and more detailed research.

At this point, I would like to take the opportunity to thank those who contributed observations of juvenile sea cucumbers. This information may help to provide a starting point for future research into this interesting, but poorly understood aspect of holothurian biology. I will continue to compile this information and welcome further correspondence regarding this subject.

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**Table 1. Observations of holothurians from Indians seas (contributed by Dr D.B. James)**

Species observed	Approx. size and number	Location	Habitat	Time	Date	Adults present?
<i>Acaudina molpadioides</i>	6.5–8 cm (several transparent specimens)	Pamban (Gulf of Mannar)	At low tide on muddy flat	13:00	1969	No
<i>Actinocucumis typicus</i>	3–4 cm	Thondi (Palk Bay)				Yes
<i>Actinopyga echinites</i>	8–10 cm	Vedalai (Gulf of Mannar)	7 m depth		1990	No
<i>Actinopyga miliaris</i>	10 cm	Tuticorin (Gulf of Mannar)	5 m depth		1993	Yes
<i>Afroccumis africana</i>	3.5–5 cm	South Point, Port Blair (Andamans)	In rock crevices along with adults			Yes
<i>Havelockia versicolor</i>	3.1 cm (n =1)	Mandapam (Gulf of Mannar)	In 1 m of water			
<i>Holothuria arenicola</i>	3 cm	South Point, Port Blair (Adamans)	Buried in sand along with adults			Yes
<i>H. atra</i> (note: these animals possibly resulted from fission – D.B. James)	9 cm	Tuticorin (Gulf of Mannar)	In the intertidal zone along with adults		1998	Yes
<i>H. edulis</i>	8.5–10 cm	Port Blair (Andamans)			1965	Yes
<i>H. hilla</i>	5 cm	South Point, Port Blair (Andamans)	Under rocks along with adults		1976	Yes
<i>H. impatiens</i>	6 cm	South Point, Port Blair (Andamans)	Under coral stones along with adults		1976	Yes
<i>H. pardalis</i>	5 cm	South Point, Port Blair (Andamans)	Under coral stones along with adults		1976	Yes
<i>H. rigida</i>	2-5 cm	South Point, Port Blair (Andamans)	Buried in sand along with adults		1976	Yes
<i>H. scabra</i>	0.5–16 cm (n=432)	Sesostri Bay, Port Blair	At low tide on reef flat	16–18:00	Feb. 1978	No
<i>H. scabra</i>	3 cm (n=1)	Mandapam (Gulf of Mannar)	Upon algae in 1 m depth		April 1970	
<i>Holothuria (Semperothuria) cinerascens</i>	5 – 7 cm (n=52)	Vizhinjam, near Trivandrum (SW coast of India)	Under rocks	8–10:00	Feb. 1964	Yes
<i>Labidodemas rugosum</i>	9–10 cm	South Point, Port Blair (Andamans)	Buried in sand along with adults			Yes
<i>Labidodemas rugosum</i>	6–7 cm	South Point, Port Blair (Andamans)	Buried in mud along with adults			Yes
<i>Patinapta ooplax</i>	7 cm	South Point, Port Blair (Andamans)	In the supralittoral zone along with adults		1976	Yes
<i>Phyrella fragilis</i>	0.4–6 cm	South Point, Port Blair (Andamans)	Buried in sand along with adults			Yes
<i>Polycheira rufescens</i>	40 cm	South Point, Port Blair (Andamans)	Buried in sand along with adults		1976	Yes
<i>Stichopus hermanni</i>	10 cm	Vedalai (Gulf of Mannar)	On algal beds		1963	No
<i>Synaptula recta</i>	2 cm	Mandapam (Palk Bay) On algal beds along with adults			1963	Yes