The ontogenetic dietary shift of blue stripped hermit crab *Clibanarius longitarsus* (Decapoda, Diogenidae) in the Negombo estuary, Sri Lanka

Ranaweera B.D.P.S. and Epa U.P.K.

Department of Zoology, University of Kelaniya, Kelaniya.

*Corresponding author (Email: epa@kln.ac.lk)

Hermit crabs represent an important portion of many intertidal and moderately deep benthic marine communities worldwide, where they play an important role in the food chain. Present study was conducted to determine the ontogenetic dietary shift of a tropical hermit crab, *C. longitarsus* inhabiting in the Negombo estuary. About sixty specimens of different sized hermit crabs were collected from intertidal and supra tidal areas of the estuary and they were preserved in 5% formalin. Hermit crabs were carefully removed from occupying shell in the laboratory and their body lengths and weights were measured. According to the measurements they were grouped in to five length classes (LC). The length and weight ranges were, LC 1 (3.0 – 5.0 mm, 0.10 – 1.90 g), LC 2 (5.0 – 7.0mm, 0.32 – 2.11 g), LC 3 (7.0 – 9.0 mm, 1.04 – 2.57 g), LC 4 (9.0 – 11.0 mm, 1.36 – 2.93 g) and LC 5 (11.0 – 13.0 mm, 2.48 – 4.10 g), respectively. Gut analysis was conducted to find out the major food items available in their diet.

C. longitarsus inhabiting in Negombo estuary showed omnivorous feeding habits. The major food items found in the gut content of *C. longitarsus* were diatoms, green algae, blue green algae, animal parts, detritus and higher plant parts. The highest relative abundance was recorded for detritus while the lowest was recorded for animal parts. Comparatively higher amount of green algae (19 %), blue green algae (3%) and diatom (23 %) were recorded in length class 2 than that of other length classes. The highest relative abundance of plant parts (34%) were recorded in length class 4 and the lowest in length class 5. Detritus (56%) and animal parts (1%) were highly abundant in gut content of length class 5. Diatoms (9%) and blue green algae (1%) were least abundant in length class 1. The lowest relative abundance of green algae (9%) was recorded in length class 4. Animal parts were not recorded in the gut content of *C. longitarsus* in length classes 2 and 4. Detritus was the lowest (28%) food item found in the gut content of length class 2. The highest trophic niche breadth was observed in length class 2 (1.45) while the lowest value was recorded in length class 5 (1.22). The cluster analysis and Multidimensional scaling (MDS) based on different length classes and the % relative abundance of different food categories of *C. longitarsus*, produced two clusters at 90.5% similarity level. But these two clusters were not significantly different ($p>0.05$; one-way ANOSIM). Therefore, it is concluded that no ontogenetic dietary shift in *C. longitarsus* inhabiting in the Negombo estuary.