

ON THE MOULTING OF *PORTUNUS PELAGICUS* LINNAEUS

K. M. S. AMEER HAMSА

*Mandapam Regional Centre of Central Marine Fisheries Research Institute,
Mandapam Camp*

ABSTRACT

Some of the interesting informations on the moulting of laboratory-reared crabs of *Portunus pelagicus* Linnaeus are given with illustrations.

The early development from zoeal to post larval stage and moulting of crab have been described by Chopra (1939). Prasad and Tampi (1953) described the eggs and the developmental stages up to the second post-larval instar of *Portunus pelagicus*. Naidu (1955) also described the early development of *Scylla serrata* and *Portunus sanguinolentus*. These accounts include a brief de-

scription on the process of moulting but do not provide any illustrations on moulting. The present account gives some of the interesting informations on moulting based on the observations made from the laboratory-reared crabs of *Portunus pelagicus* Linnaeus.

The crabs were collected from the gill net catches and brought to the laboratory in living condition. They were kept singly in rectangular polythene troughs (60 x 33 x 22 cm) with about 10 to 12 cm of sand at the bottom and 15 to 18 cm of water. Each crab was fed with pieces of clam meat once daily. The unused pieces of meat particles were removed by siphoning out the sea water in the evening. The periodic moulting in these crabs was closely observed. The crabs were weighed and measured after each moult and the data was recorded for the age and growth studies.

The crab stops feeding for about two to three days prior to its moult. The exoskeleton breaks along the posterolateral margin of the dorsal side, anterolateral border of the ventral side (Fig. 1) and posterior border of the arm of the

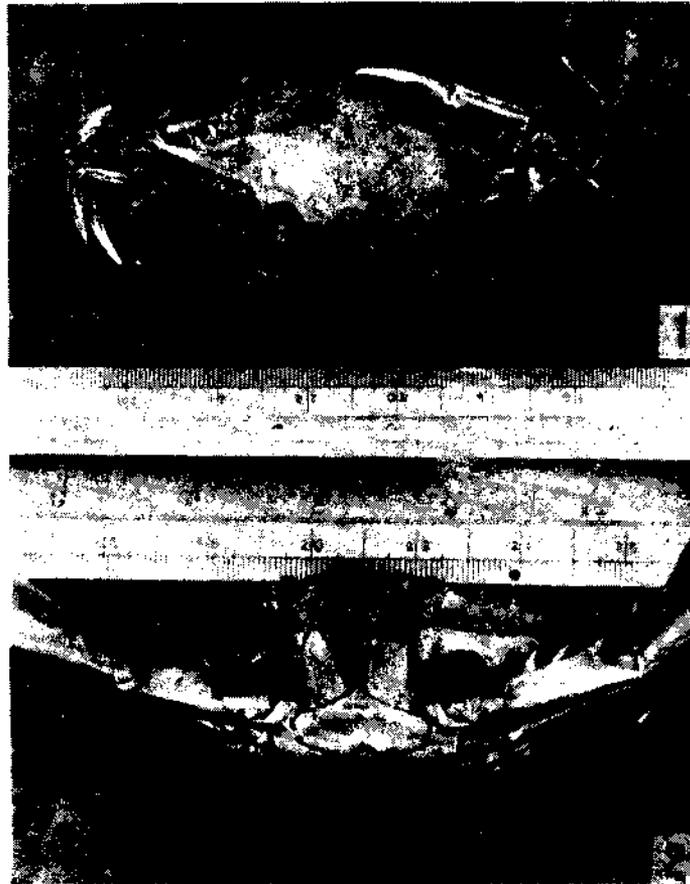


FIG. 1. Splitting of exoskeleton along the posterolateral margin (dorsal view) and anterolateral margin (ventral view) during the process of moulting, of *P. pelagicus*.

chelipeds and legs (Fig. 2). A new pre-exuvial soft layer is visible below the old carapace. At this stage the crab comes out from the old case leaving the skeleton almost intact on the sand surface (Fig. 2). The whole process of moulting takes place only at night and in the dark and is completed within 12 to 15 minutes. The newly moulted crab is seen buried in the sand. It is less active and does not eat for one to two days. The body is very soft and depressible

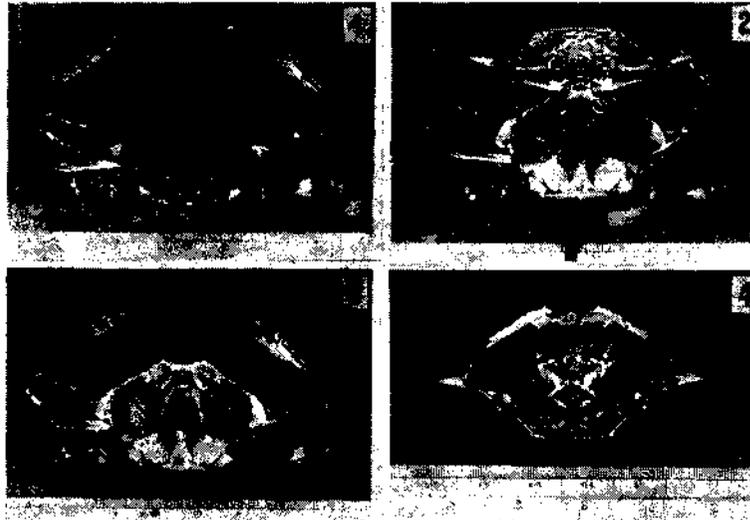


FIG. 2. 1. Moulted skeleton of male crab; 2. Splitting on the margins of posterolateral and anterolateral, and posterior border of the arm of the chelipeds and legs. Arrow points out the posterolateral border which lies above the first abdominal segment; 3. Body cavity of the empty skeleton; 4. Inside view of carapace showing the splitting on the anterior border.

on the first day morning, 55% hardened on the second day, 70% hardened on the third day, 90% hardened on the fourth day and the crab becomes entirely hardened (100%) on the fifth day of its moult. Now the crab is normal in all activities and the process of moulting is repeated again when it is ready for a further increase in size. The moulting occurs quickly in the young ones of size between 10 and 75 mm across the carapace and afterward the process becomes slow.

The author is thankful to Dr. E. G. Silas, Director, Central Marine Fisheries Research Institute for his keen interest and encouragement. Thanks are also due to Mr. P. Raghavan for the photographs.

CHOPRA, B. N. 1939. *J. Bombay nat. Hist. Soc.*, 41(2): 221-234.

PRASAD, R. R. AND P. R. S. TAMPI. 1953. *J. Bombay nat. Hist. Soc.*, 51(3): 674-689.

RAJA BAI NAIDU, K. G. 1955. *Indian J. Fish.*, 2(1): 67-76.