

Record of small sized mussel species, *Mytilopsis sallei* (Recluz, 1849) and *Modiolus undulatus* (Dunker) from Maharashtra waters

Saurabh Upadhye*, Sujit Sundaram, Swapnil Tandel and Dhanashree Bagade

Fishery Survey of India, Botawala Chambers, Sir P. M. Road, Fort, Mumbai-400 001.

*e-mail: saurabh92up@gmail.com

During a field visit to study the molluscan diversity along Maharashtra coast, unusual clusters of small sized mussels were observed. The mussels which were collected from Vashi creek were identified as *Mytilopsis sallei* (Recluz, 1849) and the mussels which were collected from Murud were identified as *Modiolus undulatus* (Dunker). During each visit, samples were collected during lowest of low tide using a 15x15 cm² quadrant randomly placed on the substratum about 0.5 m in depth and all mussels from the quadrat were removed. The population density was also estimated by counting the number of animals in different quadrants. The numbers were then averaged to estimate the animal density. The Shell length frequency distribution from each sampling site was also made. The samples were brought to the laboratory for further biological analysis. Shell length (L) was measured using a digital caliper and total weight (W) (+ 0.01 g) was determined using an electronic balance after the specimens were dried on blotting paper. The measurements were taken as described by CMFRI (1995). Size frequency was ascertained by class intervals of 5mm. The mussels have been found to grow and attain maximum size very rapidly and both of them are fouling species.

M. sallei (Fig.1) is commonly called as Black-striped mussel. The species is an alien and invasive species to Indian waters. *M. sallei* is typically found in brackish water, which can tolerate wide fluctuations in salinity and settles in clusters, rarely seen as a single individual. *M. sallei* is a small marine bivalve and is considered as a serious pest because of its fouling nature in the ecosystem where it inhabits. The period of abundance of *M. sallei* in Vashi creek is during April-May. A total of 164 specimens ranging in length from 5 to 28 mm with the corresponding weight ranging from 0.01 to 1.66 g were analysed. The average density of animals was 85 number per 15x15 cm² quadrant. Maximum number was observed in the size group 20-24 mm.

M. undulatus (Fig.2) is commonly called as Horse mussel. *Modiolus spp* has a wider distribution all along the Indian coast. *M. undulatus* can also tolerate wide fluctuations in salinity and settles in clusters, in estuarine system. *M. undulatus* is an epifauna on *Crassostrea spp*. The period of abundance of *M. undulatus* in Murud is during November-December. A total of 94 specimens ranging in length from 14 to 21 mm with the corresponding weight ranging from 0.75 to 1.15 g were analysed. The average density of animals was 10 number per 15x15 cm² quadrant. Maximum number was observed in the size group 15-19 mm.

Generally, algae are the main source of nutrition for bivalve filter feeder, but in coastal habitat, they feed on detritus, phytoplankton, benthic microflora, benthic algae and micro zooplankton. According to Dame (1996) bivalves are a 'keystone' species. A number of attributes of bivalves have led to their use as 'monitors', 'sentinels' or 'indicators' of environmental stress (Widdows and Donkin, 1992; Smaal and Widdows, 1994). This species can be used as an indicator organism for pollution assessment and also to assess the stress caused by pollution on the ecosystem of the creek, hence further biological studies of these species needs to be carried out. The present report substantially expands their known range and also suggests an important impact in the local community they invade.



Fig.1: *Mytilopsis sallei*



Fig.2: *Modiolus undulatus*