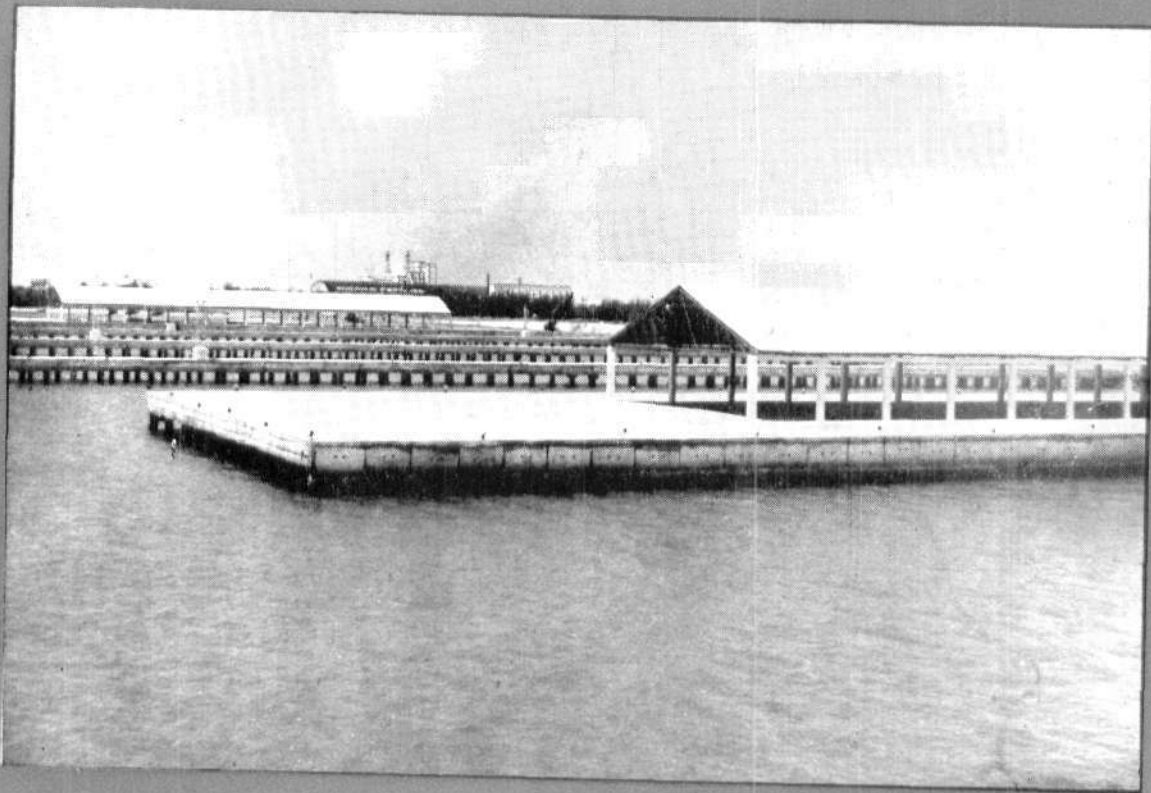




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SOME ASPECTS ON THE FISHERY AND BIOLOGY OF PERISCOPE SHRIMP FROM BOMBAY WATERS*

Introduction

The Periscope shrimp *Atypopenaeus stenodactylus* Stimpson constitutes a fishery at Versova by 'dol' net. The annual average landing was reported to be 105 tonnes at this centre constituting about 3.3% of total 'dol' net landings of prawns at this centre (Kunju, 1967, *Proc. Symp. Crust.*, 4: 1382-97). The fishery is seasonal lasting from November to May. A comparative study of fishery of this little known species is given for the years 1983 and 1984 at Versova and Sassoon Dock.

The area of operation for *A. stenodactylus* at Sassoon Dock is off Murud-Harnai coasts of Maharashtra. The operational depth may range from 27 to 70 m.

The landings at Versova were estimated for 'dol' landings considering each boat net combination as a fishing unit. At Sassoon Dock only mechanised country craft trawlers that brought medium sized penaeids such as *Metapenaeopsis stridulans* during March-May were considered for study and estimation of the landings of periscope shrimps. The monthwise landings by 'dol' net at Versova are given in Table 1.

The percentage of this species in total prawn landings by 'dol' at Versova was estimated at 3.5 and 2.8 respectively for 1983 and 1984. The considerable decline in the magnitude of catches at Versova during 1984 may be attributed to the general decline in catches of prawns.

Table 1. Monthwise landings of Periscope shrimp by 'dol' net at Versova during 1983-'84

Month	Catch (kg)	
	1983	1984
January	21,500	2,005
February	11,500	3,015
March	21,000	4,015
April	21,500	3,010
May	31,500	2,010
June	—	—
July	—	—
August	—	—
September	—	—
October	—	—
November	48,500	2,000
December	51,290	2,427
Total	2,06,790	18,482

* Prepared by M. Aravindakshan and J. P. Karbhari, Bombay Research Centre of CMFRI, Bombay.

The landings by trawlers at Sassoon Dock are given in Table 2.

Table 2. Landings of *Periscopc shrimp* by trawlers at Sassoon Dock.

Months	Catch (kg.)	
	1983	1984
March	4,415	4,210
April	3,315	3,118
May	2,274	3,577
Total	10,004	10,905

The quantity landed at Sassoon Dock was much less than that landed at Versova. This might be due to the escaping of juveniles through the large meshes of the net (3 cm) as compared to that of 'dol' nets (1 cm) and also due to the different depth ranges where the nets were operated. At Sassoon Dock the landings constituted 1.5% of total prawn landings.

Variations were noticed with regard to size range and sex ratio at each centre. The total length was found to range from 22-38 mm at Versova with a sex ratio of 1:3 with female dominance (Table 3). In trawler landings at Sassoon Dock, females were always dominant. A size range of 40-65 mm was noticed for the specimens from trawler catches at Sassoon Dock.

Table 3. Month-wise sex ratio of *A. stenodactylus* at Versova and Sassoon Dock

Place	Month	1983		1984	
		Male %	Female %	Male %	Female %
Versova	January	48	52	46	54
	February	50	50	50	50
	March	43	57	42	58
	April	50	50	50	50
	May	60	40	48	52
	June	—	—	—	—
	July	—	—	—	—
	August	—	—	—	—
	September	—	—	—	—
	October	—	—	—	—
	November	50	50	48	52
	December	48	52	52	48
Sassoon Dock	March	30	70	22	78
	April	20	80	15	85
	May	22	78	18	82

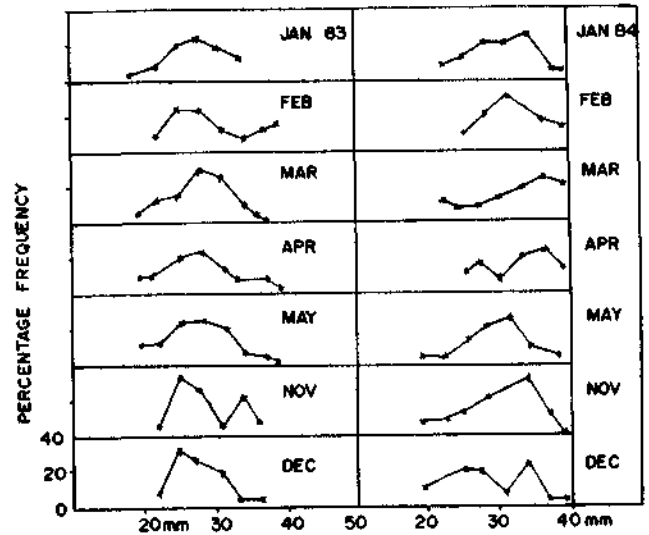


Fig. 1. Length frequency distribution of *Atyppopenaeus stenodactylus* Stimpson at Versova (Dol net).

'Dol' catch

The dominant mode at 25 mm was noticed in November and December 1983. During the other months the main mode remained at 28 mm for 'dol' net at Versova. In 1984 the dominant mode was at 35 mm for January, November and December. During other months, chief mode was at 33 mm with slight progression in March and April when the mode stood at 38 mm (Fig. 1).

Trawler catch

In 1983 the mode at 56 mm had dominated in March which more or less continued upto April. It shifted to 60 mm in May. During 1984 dominant mode at 58 mm was found to continue in April and May (Fig. 2).

Of the 620 specimens of size range 22-65 mm analysed crustacean appendages, sand grains and debris constituted the major food items.

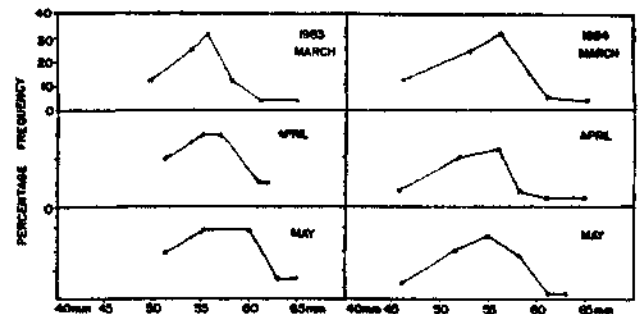


Fig. 2. Length frequency distribution of *Atyppopenaeus stenodactylus* Stimpson at Sassoon Dock (Trawl net).

The crustacean appendages were mainly of copepods and decapod crustaceans. This formed about 75% of the food injected. Sand grains and debris constituted 20% and foraminifera 5% of the total stomach contents.

The specimens found in 'dol' nets were immature. Mature females were rarely noticed. In trawler landings which were mostly females, the percentage of mature specimens was as high as 80%. This indi-

cated that the species spawned during these months. The sudden appearance of this species in November in 'dol' catches at Versova suggests their shoreward movement from deeper waters where spawning takes place.

This species being small, does not attract a ready market in fresh conditions. The 'dol' catches are sun-dried whereas trawl net landings are sold along with medium sized penaeids.

