

## A NEW RECORD OF TWO PENAEID SPECIES FROM GOA COAST

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### ABSTRACT

Adults of *Penaeus japonicus* (Bate) and juveniles of *P. canaliculatus* (Olivier) were recorded for the first time from the coastal and estuarine regions of Goa respectively. Their presence in Goa waters suggests that both the species have a wide distribution along the west coast of India. The available data from the neighbouring states suggest that both the species are distributed in deeper waters and are caught during or immediately after the southwest monsoon. Hence, it may be possible to tap these valuable resources from Goa waters if the fishing operation is extended to depths beyond those presently fished and fishing is carried out during the SW monsoon season.

Seventeen species of penaeid shrimps belonging to 5 genera have been recorded from the coastal water of Goa (George, 1980). Among them, the genus *Penaeus* is represented by 4 species, viz. *P. monodon*, *P. merguensis*, *P. indicus* and *P. semisulcatus*. However, from the point of view of commercial importance *P. merguensis* is the most abundant species followed by *P. monodon*.

In a survey carried out recently on the penaeid shrimp resources in the coastal waters and estuaries of Goa, 2 more species belonging to the genus *Penaeus* were collected and recorded for the first time. At a depth of about 30 m off the coast of Aguada, several specimens of *P. japonicus* (Bate) both males and females (TL, 102-106 mm), were caught in the trawl nets during various months in 1990. Also, 12 juvenile specimens of *P. canaliculatus* (Olivier) (5 males and 7 females; TL, 62-65 mm) were caught from the Mandovi estuary in the stake nets during March-April 1991. Since these two species have been collected for the first time from Goa region, it is reported here.

These two species are morphologically very closely allied and are difficult to differentiate. Holthuis (1980) felt that most of the pre-1976 records of *P. canaliculatus* may actually be those of *P. japonicus*, since the distinctive morphological differences were recognised only in 1976 by Perez-Farfante.

Fischer and Bianchi (1984) and Kathirvel and Selvaraj (1988) have described and illustrated the morphological differences of these species and the latter has also made a comparative study of the colour patterns of the juveniles. The most important morphological differences by which these species can be separated from each other (during the juvenile stage also) are, in *P. japonicus* the telson is armed with 3 pairs of movable lateral spines and the last abdominal band is discontinuous while in *P. canaliculatus* the telson is unarmed and the last abdominal band touches the ventral region. The males and females can easily be differentiated by the differences in the configuration of petasma and thelycum (see Fischer and Bianchi, 1984)

In Japan, *P. japonicus* is the most important and abundant species, both in capture and culture fisheries. In India, this species has been reported to occur in small numbers along the Maharashtra and Tamilnadu coasts (Kurian and Sebastian, 1976). In recent years, however, it has grown into a significant fishery along the Bombay coast during the SW monsoon season and is being exported exclusively to Japan (Aravindakshan and Karbari, 1983). Juvenile specimens (TL 20-50 mm) have also been caught from the estuaries along the Karwar coast (south of Goa) during the postmonsoon season (Nandakumar, 1984). The presence of this species along the Goa coast, thus indicates that it may have a continuous distribution along the west

coast of India.

*P. japonicus* is known to inhabit deeper waters upto a depth of 90 m (Holthuis, 1980) and in Bombay region, it is caught between 40 and 60 m depth (Aravindakshan and Karbari, 1983). This may be the reason why this species does not form a regular component of the shrimp fishery along the Goa coast because the conventional trawling ground in Goa does not normally exceed 40 m isobar. Also, along the Bombay coast, the catch has been reported to be high during the monsoon season whereas trawling operations almost comes to a standstill along the Goa coast during this season due to bad weather and rough sea conditions.

*P. canaliculatus* has been reported to form a very small percentage of the panaeid shrimp fishery along the Tamilnadu (Jones, 1967), Bombay (Kunju, 1967) and Gulf of Kutch (Ramamurthy, 1967) coasts. Since the pre-1976 records of this species is a matter of dispute, the identification can not be confirmed. However, along the Neendakara coast (SW coast of India), a potential fishery of this species has been identified in deeper waters immediately after the SW monsoon season (Suseelan *et al.* 1982). Although juveniles have been observed in small numbers in the Cochin backwaters and Ashtamudi Lake for quite some time, the adults could be caught in commercial quantity only after changing the fishing season and extending the depth of operation. Another noteworthy factor is that they were caught only during night time. In some estuaries along the Karwar coast also postlarval stages have been recorded in small numbers (Nandakumar, 1984). Thus, it is apparent that this species also has a wider distribution along the west coast of India, probably in deeper waters.

The presence of young ones in the estuary of Goa is a clear indication of the fact that adults are distributed and also breed in deeper waters beyond the conventional trawling zone and thus avoiding capture. Since both species are caught from deeper waters, particularly during or immediately after the SW monsoon, it is

suggested that the depth and season for trawling operations may be extended, so as to locate and tap these valuable resources in Goa.

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