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A POTENTIAL NEW RESOURCE OF PRAWNS FROM NEENDAKARA AREA IN KERALA COAST*

In recent years Neendakara - Sakthikulangara area in Kerala has emerged as a prominent prawn fishery centre of the country. In view of the importance of this trawl fishery the Central Marine Fisheries Research Institute has been monitoring the resource with reference to species composition, catch potential and biological parameters of the fishery for the past several years. The main fishing season in this area is the monsoon months June - August when an average of about 35,000 tonnes of prawns are landed, most of which (76%) are contributed by the species *Parapenaeopsis stylifera* locally known as 'Karikadi'. This is a species growing to a small size upto about 130 mm. The bigger species *Penaeus indicus* ('Naran') contributes to a lesser percentage. Species like *P. monodon* ('Ocean Black - Tiger') and *P. semisulcatus* ('Ocean Black - Flower') are also found in the catches occasionally.

It is reported that night trawling in the sea off Sakthikulangara and other neighbouring centres is forebidden by Government order. However, every year some trawlers owned by the local people operate occasionally during night in the usual shrimp trawling grounds (upto about 25 m depth) for 2-3 months after the monsoon fishery is over. In 1981 it was noticed that soon after the main season for 'Karikadi' was over in August - September about 80-100 trawlers started going for night fishing from October onwards. About 50% of these boats operating in slightly deeper areas outside the conventional trawling grounds landed on an average 56 kg of prawns each. The catch details on certain observation days are given in Table 1, the total catch of prawns for one night being estimated at an average of 2,520 kg. The most striking feature of these catches is that they are constituted by a group of species entirely different from those commonly occurring in the monsoon fishery of this area. The species *Panaeus canaliculatus* (Fig. 1), termed by the industry as 'Ocean Black - Zebra', ranging from 150 to 200 mm in total length, contributed to 35% (19.6 kg/boat) of these catches. The remaining portion mostly consists of smaller unconventional species such as *Trachypenaeus curvirostris*, *T. sedili*, *Metapenaeopsis mogiensis* and *Solenocera choprai* (Fig. 2). Out of the estimated catch per night of 2,520 kg, *P. canaliculatus* accounted for 882 kg. These prawns were particularly more during the nights of bright moon light as told by the fishermen.

P. canaliculatus similar to the tiger prawn is especially attractive to the industry in view of the large size, numbering 22/kg ('head on') for females and 29/kg for males. It fetches about Rs 75 to 100/- per kilogram to the fishermen. Analysis of samples showed that female prawns, of which 83% had ovaries in the late-maturing or matured condition, dominated in the catch and the sex ratio was 56 : 44.

Fig. 1. *Penaeus canaliculatus*

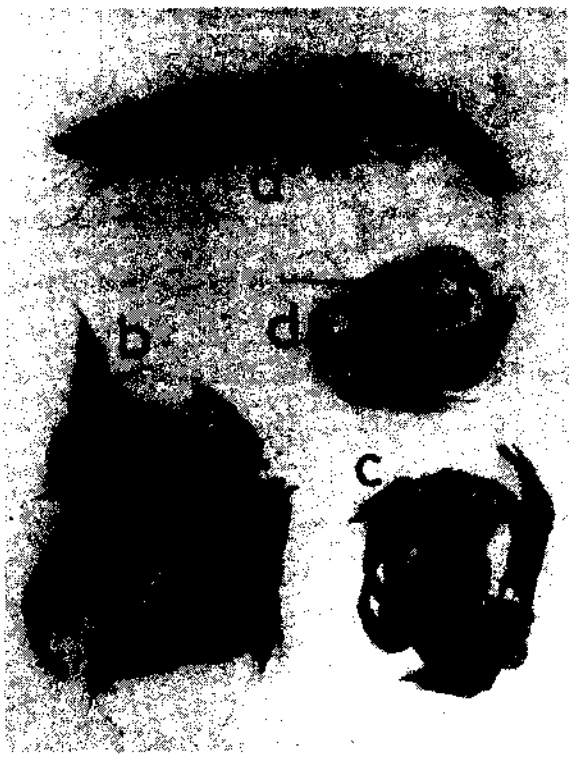

Fig. 2. A sorted out sample of prawn catch. a - *Penaeus canaliculatus*, b - *Trachypenaeus curvirostris* and *T. sedili*, c - *Metapenaeopsis mogiensis*, d - *Solenocera choprai*

*Prepared by C. Suseelan, M. M. Thomas, N. S. Kurup and K. N. Gopalakrishnan with the guidance of M. J. George.

Although juveniles of *P. canaliculatus* have been found to occur in small numbers in the Cochin backwaters and Ashtamudi Lake in recent years, it has never been recorded to form such sizable portion of the fishery anywhere in the coastal waters of India. It would appear as though the new resource has been recognised as a result of the change in the time of fishing.

Unfortunately this fishery did not last long since there was strong protest from the indigenous fishermen who operate gill-nets and hooks and lines in the offshore waters during night as they complained that their gears were being damaged by these operations and also from the fishermen who operate trawl nets during day time in the usual shrimp trawling grounds fearing disturbance to the fishing ground and consequent reduction of their catch in the morning. Thus by about the middle of November, 1981 the night trawling was stopped by the intervention of the Government.

In order to confirm whether similar concentrations of these unconventional species occur in the neighbouring areas of the same depths, a few experimental shrimp trawling was conducted off Cochin during January and February, 1982. Trawl hauls were taken at 10,20,30 and 40 m depth during night and day time. The results indicated that while smaller species occurring in the conventional fishery of the area were present in abundance in the hauls taken at 10 and 20 m depth they were very scarce in the catches from 30 and 40 m depth region. At the same time the hauls from greater depths yielded larger species like *P. semisulcatus*, *P. monodon* and *Metapenaeus monoceros* in relatively more numbers during day time while in the night the catches from the same depth region were dominated by the unconventional species like *P. canaliculatus* and *Trachypenaeus* spp, noticed in the night fishery of Sakthikulangara area mentioned earlier. This would indicate that the resource of the above species are probably available all along this coast in slightly deeper regions in varying concentrations for exploitation during night, depending on the behaviour of the species. However, further detailed experimental fishing and monitoring are necessary to establish the magnitude and distribution pattern of these resources for which the Institute has already initiated action.

The points for consideration in the exploitation of this valuable potential resource are: 1) For quite some time now, ever since juveniles of *P. canaliculatus* started appearing in the fishery during certain seasons; first in the Cochin backwaters and later in the Ashtamudi Lake, the scientists of CMFRI were on the look out for the adult population giving rise to these younger generations. The location of these concentrations of large size prawns has come as an answer to their search. As long as these juvenile prawns of the species are found in the inside waters it is an indirect indication that the adult population would be occurring somewhere outside.

2) The peculiar behaviour of these prawns is such that they are available in the fishery during nights only and not seen anywhere in the nearby areas in the conventional day time fishery except for rare specimens. So, if at all this resource is to be made use of, night fishing has to be resorted to.

3) At the same time night fishing is resisted by the indigenous fishermen for reasons mentioned earlier. A compromise has to be worked out for exploitation of the new resource taking into consideration all the economic factors and the conflicts involved.

Table 1: *Details of night catch of prawns in shrimp trawlers operated at about 30-35 m depth off Neendakara*

Serial No. of units examined at random	Landings in kg					
	24.10.1981			*10.11.1981*		
	P. canaliculatus	Other species	Total prawns	*P. canaliculatus*	Other species	Total prawns
1	18	45	63	15	28	43
2	27	50	77	12	30	42
3	35	35	70	8	25	33
4	36	45	81	10	25	35
5	20	68	88	2	6	8
6	27	35	62	-	-	-
7	26	50	76	-	-	-

4) The specimens of *P. canaliculatus* caught in the night fishery reported are quite large and constitute adult population of the species. If this population is not exploited from the area at the right time the fishery will be only lost every year due to natural mortality.

5) The indications at the moment are that the occurrence of the resource here is seasonal, and that after the main Karikadi fishing season of the area. Whether it is strictly seasonal or available throughout the year or for an extended period in the year needs to be investigated.

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