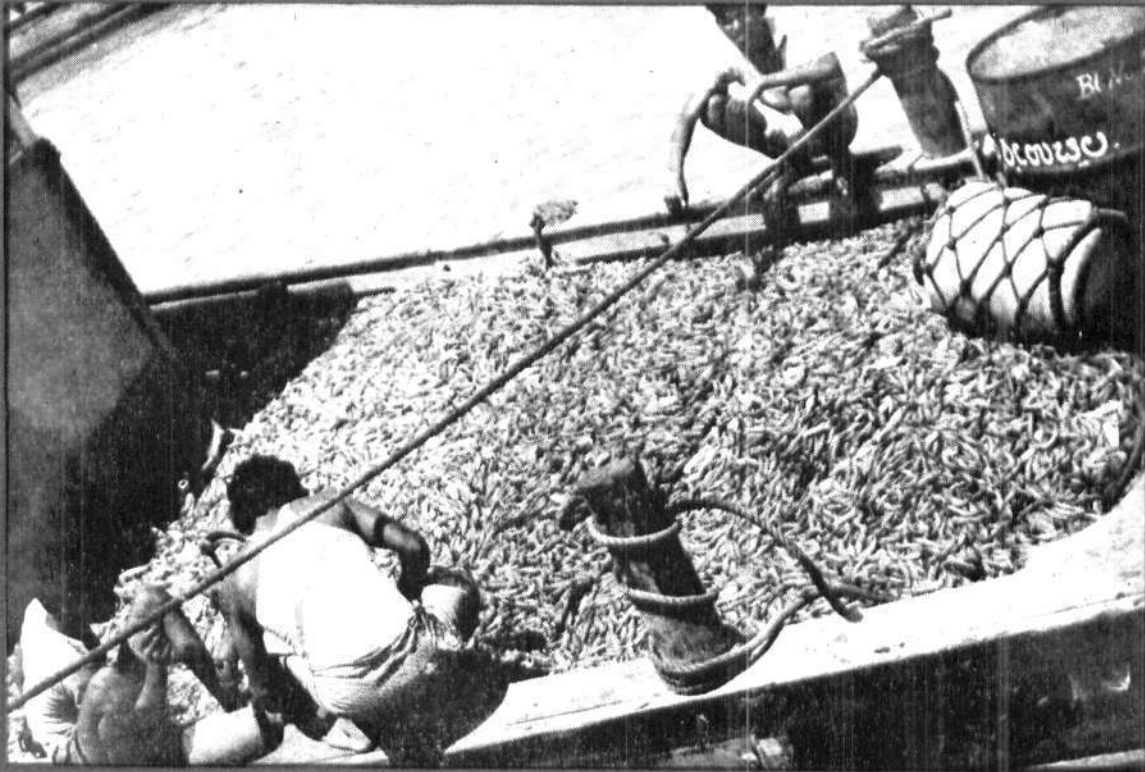




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**THE MARINE FISHERIES INFORMATION SERVICE:** Technical and Extension Series envisages the rapid dissemination of information on marine and brackish water fishery resources and allied data available with the National Marine Living Resources Data Centre (NMLRDC) and the Research Divisions of the Institute, results of proven researches for transfer of technology to the fish farmers and industry and of other relevant information needed for Research and Development efforts in the marine fisheries sector.

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# AN UNUSUAL BUMBER CATCH OF WHITE PRAWN, *PENAEUS INDICUS* FROM KOVALAM BAY NEAR MADRAS\*

## Introduction

In the history of the fishing village, namely, Kovalam (lat. 12°47'N long. 80°15'E), formerly known as Covelong, situated 35 km south of Madras City, heavy landings of the Indian white prawn, *Penaeus indicus* caught with gill net have occurred for the first time during 16th–20th December, 1984. The inshore sea off Kovalam is a cove or a small bay, from which the village's name could have been derived as 'Covelong' (Fig. 1). The bottom of the bay is rocky covered by sand to a height of about 1m and there are a number of projected rocks scattered around the bay which prevent trawling in this ground. Usually, prawns are caught by the traditional gill net (single layer) during the post monsoon months (January–June) and the catch composed of larger-sized (150 to 180 mm) white prawns and rarely tiger prawns (*P. monodon*) of 190 to 250 mm. From April, 1984 onwards, sporadic fishing with the newly introduced 'Trammel net' was carried out. In this net, there are three

layers, the middle one having smaller mesh (45 mm) and outer layers with larger mesh (400 mm). Unlike the traditional gill net locally known as 'Aravalai' (45 mm mesh size), the bottom of the trammel net has lead as weights at regular intervals of 15 cm, so that the net can get buried to a depth of 10 cm in the silt-sand bottom of the fishing ground. The overall length and breadth of this three-layered net is 120 to 200 m and 2.5 to 3.0 m respectively. This net is locally called as 'Mani valai.'

## Fishing

It all started on 16–12–1984 when 50 units of catamaran belonging to Kovalam, Karikkattukuppam and Chemenjeri engaged in operation of trammel nets from 0600 to 1600 hrs landed white prawns at a rate of 2 to 8 kg per unit. The news of gill netting of white prawns spread to the nearby fishing villages and also as far as Thevanampatnam, north of Cuddalore (about 121 km south of Kovalam) which resulted in large scale

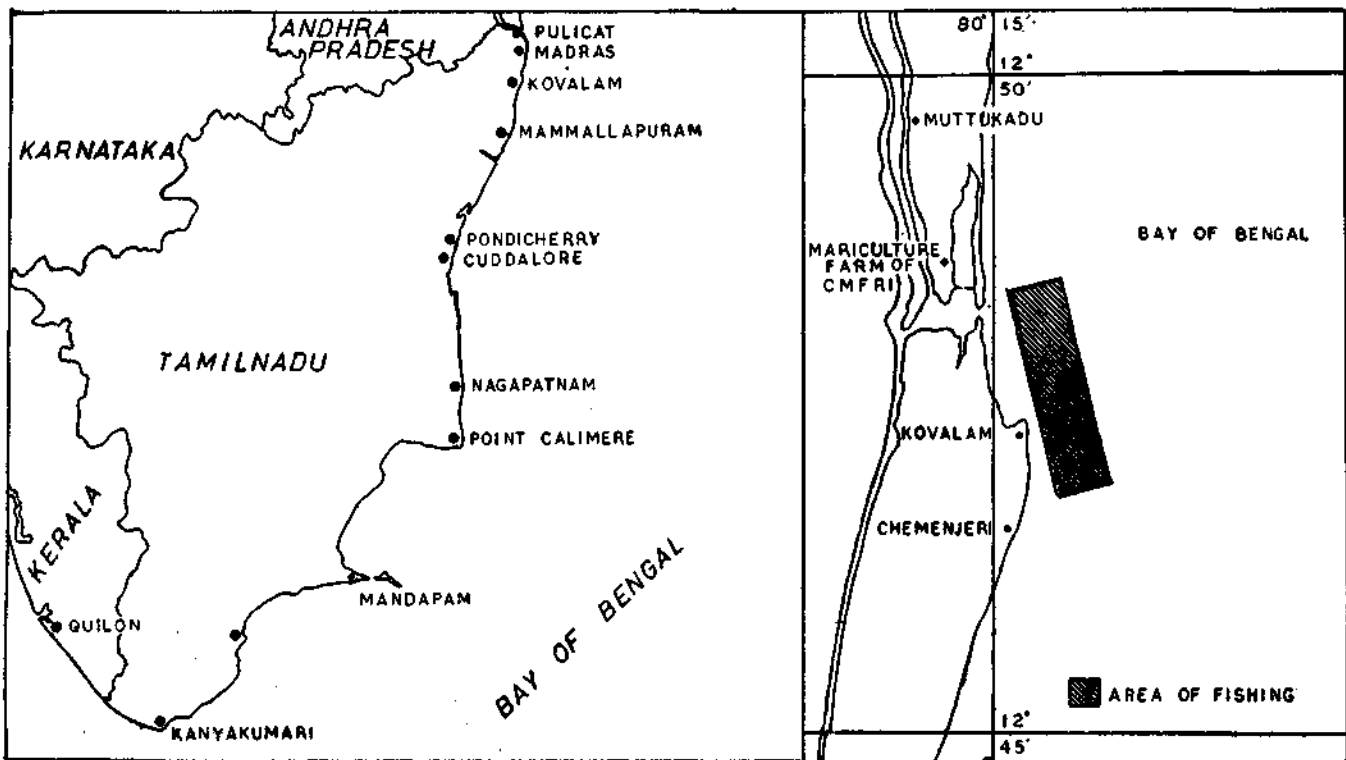


Fig. 1. Map showing Tamilnadu coast and Kovalam Bay.

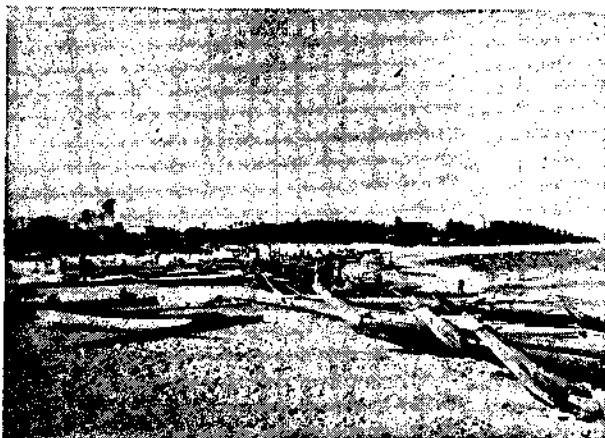
\*Prepared by M. Kathirvel, V. Selvaraj, A. Ramakrishnan, S. Palanichamy, K. Shahul Hameed, P. Poovannan and M. Bose, Madras Research Centre of CMFRI, Madras.

gill net operations by hundreds of catamarans for four days, from 17th to 20th December, 1984. The landings of white prawn were examined randomly to assess the overall catch. Date-wise particulars of units operated, estimated catch and catch per unit are given below.

Date	No. of units operated	Estimated catch (in tonnes)	Catch (kg) per unit (range)
16-12-'84	50	0.250	2 to 8
17-12-'84	300	4.620	5 to 30
18-12-'84	560	7.448	7 to 25
19-12-'84	412	1.160	1 to 8
20-12-'84	60	0.200	½ to 5
<b>Total</b>	<b>1382</b>	<b>13.678</b>	<b>½ to 30</b>

On the sixth day (21-12-'84), 45 units of trammel nets were operated at Kovalam but there was virtually no landing of prawns.

Suspecting a southerly migration of prawns, enquiries were made in different fishing villages between Kovalam and Mammallapuram (formerly known as Mahabalipuram). It was learnt from the fishermen of Devanarikuppam (15 km south of Kovalam) and Mammallapuram (18 km south of Kovalam) that heavy landings of *P. indicus* ranging from 10 to 30 kg per unit occurred on 20-12-'84 and 21-12-'84. When the fishermen at Nochikuppam (30 km north of Kovalam) were contacted, it was learnt that fishing by trammel net for *P. indicus* was intensified during 11th to 15th December, '84, as the return of catch was heavy. All these fishermen expressed their opinion that white prawns were moving southerly, close to the coast, taking advantage of the prevailing southerly wind and current.



Photograph No. 1. Landing of white prawns by cattamarans at Kovalam, Madras.

In this heavy fishing at Kovalam, fishermen from Thevanampatnam (121 km south of Kovalam) to Royapuram (northern part of Madras city) participated. They transported their catamarans by lorries to Kovalam. The news of white prawn catch was conveyed even to the far off fishermen through postal communication by their friends and relatives from Kovalam and nearby villages.



Photograph No. 2. A heap of prawns caught from Kovalam Bay near Madras.

#### Analysis of random samples

Random samples were collected on 2nd (17th Dec.), 4th (19th Dec.) and 5th (20th Dec.) day of fishing for biological observations. The catch was exclusively composed of *Penaeus indicus* and stray specimens of *Metapenaeus dobsoni* and few fishes like carangids and sciaenids. The sex-wise size distribution of *P. indicus* on the sampling days is given in Fig. 2. The overall size range for *P. indicus* was between 99 and 160 mm. In the second day of fishing (17-12-'84), the dominant size group observed for male and female was 116-120 mm and 126-130 mm respectively, which was seen at 125-130 mm for both sexes on 4th day (19-12-'84) of fishing. However, the dominant size was reduced to 121-125 mm for both sexes on the final day of fishing (20-12-'84). Among the sexes, females dominated during 2nd and 5th days of fishing, while males were more in number on 4th day of netting. Female specimens above 125 mm showed either spent or early maturing stage. Fully matured females were rare in the catch. On the contrary, few female specimens of *M. dobsoni* encountered were either impregnated or fully matured or both. The size range for *M. dobsoni* was 71 to 85 mm.

#### Disposal of catch

There are two main prawn traders, for procuring prawns and onward transmission to processing plants

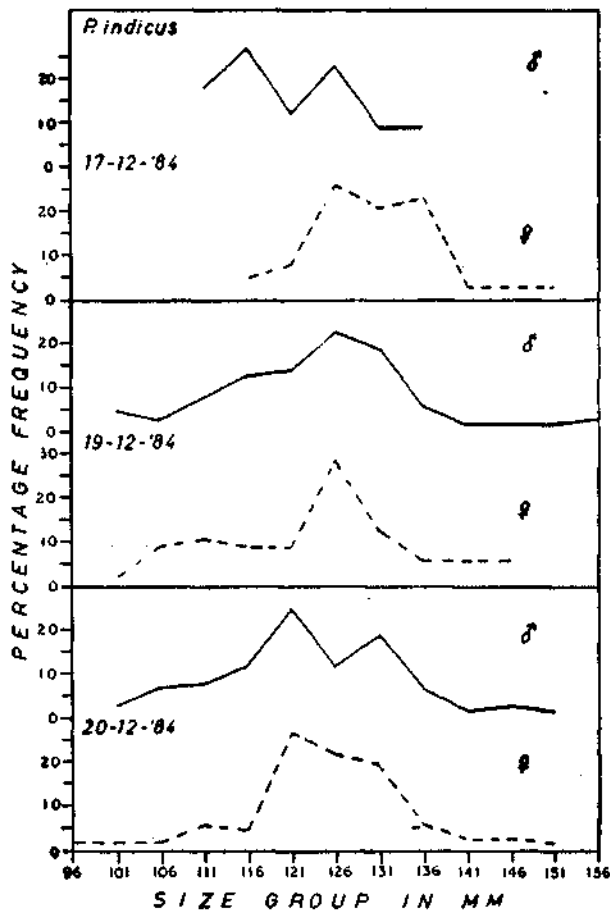


Fig. 2. Size distribution of male and female of *P. indicus* in the random samples analysed.

located in Madras city, one at Kovalam village itself and the other at Chemenjeri, situated 1 km south of Kovalam. Both were engaged in prawn business for more than two decades and so far they have not witnessed such spurt in white prawn landings from this region. First day, they offered Rs. 55/- per kg of beheaded prawns and the count per kg was 90. As these agents started sending large quantities of prawns everyday to a few particular processing plants, from whom they had drawn finance, it was beyond these factories' daily capacity of processing prawns. The companies were forced to keep excess prawns in cold storage and started processing them after 2 or 3 days; by which time, part of the stored prawns became deteriorated. Hence, they offered only Rs. 45 per kg to their respective agents stationed at Kovalam and Chemenjeri, who in turn paid Rs. 35 to 40 per kg to the fishermen. However, a marginal gain was achieved by the prawn merchants. Apart from these two local agents, prawn merchants from Madras city also purchased the white prawns at the seashore itself.

## Remarks

Along the Indian coast, schooling and migration of *P. indicus* supporting a seasonal lucrative fishery have been reported at Kanyakumari district (George and Mohamed 1967; Suseelan 1973; Anon. 1975) and at Manappad-Tinnaveli coast (Mannisseri and Manimaran 1981). Recent mark-recapture experiments on *P. indicus* have also established the fact that a longer migration of tagged white prawns took place from Cochin, (place of release) to Ovari - Manappad fishing villages on the southeast coast (Tinnaveli coast), covering a distance of 330-380 km in 68 to 103 days at a rate of 3.5 to 5.5 km/day (Anon., 1982). These observations indicated a southerly migration of white prawn along the Kerala, Kanyakumari and Tinnaveli coasts. The present observation also indicated a similar southerly movement of large schools of white prawns, as evidenced by the heavy fishing along the Madras coast during 11-15th December, followed by intensive fishing at Kovalam bay during 16th-20th December.

While studying the white prawn fishery along the Kanyakumari district, Suseelan (1973) observed a southward migration of shoals from Colachel to Manakkudy, covering a distance of 32 km in 3-4 days. The southward migration of white prawns during the present study was in conjunction with the prevailing southerly current along the coast. According to Ganapati and Murthy (1954), the southerly current intensified during the northeast monsoon, particularly in December along the Madras coast, to about 2½ knots/hr within 14 miles from the coast, beyond which it lowered to 1 knot. The size group which contributed to this unusual fishery was 121-130 mm, aging approximately 4-5 months, a probable brood from the second peak spawning (July-September), as mentioned for *P. indicus* in the Madras region (Anon., 1975).

## REFERENCES

- ANON. 1975. Report of the All India Co-ordinated Research Project - Studies on marine prawn biology and research, CMFRI, Cochin: 1-124.
- ANON. 1982. Mar. Fish. Infor. Serv. T & E Ser., No. 45.
- GANAPATI, P. N. AND V.S.R. MURTHY 1954. Mem. in Oceanogr., Andhra Univ. Ser., No. 49: 125-142.
- GEORGE, M. J. AND K. H. MOHAMED 1967. Proc. Indo-Pacif. Fish. Coun., 12th Sess., Sect. II: 210-219.
- MANISSERI, MARY, K. AND C. MANIMARAN 1981. Indian J. Fish., 28: 208-216.
- SUSEELAN, C. 1973. Proc. Second Workshop on the All India Co-ordinated Project - Studies on marine prawn biology and resources: 1-6.

