PRAWN FISHERY BY TRAWL OFF CANNANORE DURING 1965-1968

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ABSTRACT

The prawn catches by trawl off Cannanore have been assessed from the landing data of the shrimp trawl at depths 15 - 26 m during January 1965 to June 1968. Annually an average catch of 624 tonnes of prawns was landed by the mechanised boats at Cannanore. The catch rates and the dominant size ranges and the depth-wise distribution of the different species of prawn which formed the bulk of the fishery during different months are also given.

INTRODUCTION

Various aspects of the biology and fishery of several commercial prawns in Indian waters have been dealt with by earlier workers, namely, Menon (1953), Panikkar and Menon (1955), George (1961), Kuthalingam *et al.* (1971), Kunju (1967), Kagwade (1967), Mohamed (1967) and Ramamurthy (1967). But no information is available on the assessment of resources, seasonal fluctuations, species composition and the magnitude of the fishery at Cannanore in spite of the fact that prawns constituted about 58.4% of the total catch of the mechanised boats here. Though the present account is by no means comprehensive it is felt that, in the absence of other data, the present account will be of help to the commercial enterprise to have a better knowledge of the prawn fishery of this area.

MATERIAL AND METHODS

Shrimp trawl with a cod end of 2.54 cm mesh was the gear used by the mechanised boats throughout the period of observations from January 1965 to June 1968. The length of the boat varied from 25' to 43.5' with a horse power range of 16-70. The fishing operations were conducted in the area off Cannanore (Lat. 11° 50' N, Long. 75° 21' E) at depths of 15-26 metres.

The number of fishing trips of the boats was used in the calculation of catch per unit of effort since no information was available regarding the actual effort in hours. Information on trawling depths and other details were collected from the crew. Random samples of prawn catches were collected and the weights of the individual species were taken for determining the catch composition. Only the

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following four species of prawns were recorded in the catches: 1. *Metapenaeus dobsoni*, 2. *Metapenaeus affinis*, 3. *Parapenaeopsis stylifera* and 4. *Penaeus indicus*.

RESULTS

Prawn landings

The estimated total landings of prawns for the period 1965 to 1968 amounted to 2525.4 tonnes, of which 1376.2 tonnes, more than half of the total catch, were contributed during the year 1968 alone (Table 1). The percentage of prawns caught in 1968 was 71.8, while in 1965 and 1966 also prawns dominated the catch, constituting 65.2 and 60.2% respectively. But in 1967 the fish catches were more and prawns contributed to only 42.1%

TABLE 1. *Catch statistics for the period* 1965-1968

Period	Number of Fishing trips	Catch in kg (Figures in parenthesis indicate catch per unit of effort in kg)		
		Over all	Fish	Prawns
1965	3345	670300 (200.4)	232975 (69.6)	437325 (130.7)
1966	3556	530232 (149.1)	217022 (61.0)	313210 (88.1)
1967	5266	950088 (180.4)	551437 (104.7)	398651 (75.7)
1968	7330	1916880 (261.5)	540677 (73.8)	1376203 (187.7)

The fishing operations generally commence during the second week of October and last till May. However, in 1967 and 1968 the trawling operations were extended up to the second week of June. The month-wise catch and catch/unit effort for the different species are given in Table 2. *Metapenaeus dobsoni* formed the bulk of the catches during the year 1965, 1966 and 1968, constituting 62.4, 61.4, and 68.1 per cent respectively. *Parapenaeopsis stylifera* dominated the catch in 1967, forming 58.4 per cent.

Commercial size groups

The dominant size ranges which formed the bulk of the prawn catches of the different months during 1965-68 and the fluctuations in the length ranges for the different months could be seen from Table 3.

Depth-wise catch distribution

Table 4 represents the percentage catch of different species of prawns at various depth levels. The maximum quantity of *M. dobsoni* was noted between

TABLE 2. *Month-wise catch statistics of the different species of prawns for the period 1965 to 1968* (Figures in parenthesis indicate catch per unit of effort in kg)

Species	1965 Jan.	Feb.	March	April	May	Nov.	Dec.	Annual Total
M. dobsoni	72211	59584	9100	30389	548	4200	10202	186234
	(77.9)	(57.5)	(29.1)	(58.0)	(2.6)	(50.6)	(46.4)	(65.7)
M. affinis	2111	17892	4816	—	77	74	509	25479
	(2.1)	(17.3)	(15.4)		(0.4)	(0.9)	(2.3)	(7.6)
P. stylifera	29633	67638	39592	41578	35507	174	2676	216798
	(30.6)	(65.2)	(107.6)	(79.3)	(174.9)	(2.0)	(12.2)	(43.0)
P. indicus	775	—	52	2328	5628	31	—	8814
	(0.8)		(0.2)	(4.4)	(27.7)	(0.4)		(2.6)
Total	104730	145114	53560	74295	41760	4479	13387	
	(111.4)	(140.0)	(152.3)	(141.7)	(205.6)	(53.9)	(60.9)	

Species	1966 Jan.	Feb.	March	April	May	Nov.	Dec.	Annual Total
M. dobsoni	70874	16099	78963	10459	13747	11435	24522	226099
	(105.1)	(21.2)	(83.8)	(118.8)	(106.1)	(32.1)	(38.0)	(64.14)
M. affinis	265	2756	2237	263	—	—	997	6518
	(0.4)	(3.6)	(82.3)	(2.9)			(1.4)	(1.8)
P. stylifera	17969	15391	19925	2054	438	236	18918	74931
	(26.6)	(20.3)	(21.1)	(23.3)	(2.3)	(0.6)	(23.3)	(21.0)
P. indicus	3087	2328	—	—	—	—	247	5662
	(4.5)	(3.0)					(0.3)	(1.6)
Total	92195	3657	101125	12776	14185	11671	44684	
	(136.6)	(48.1)	(187.2)	(145.0)	(140.4)	(33.3)	(63.0)	

Species	1967 Jan.	Feb.	March	April	May	June	Oct.	Nov.	Dec.	Annual Total
M. dobsoni	14306	29195	20167	8247	15592	642	85	7080	24865	120179
	(18.7)	(41.4)	(22.5)	(9.1)	(24.3)	(9.72)	(5.0)	(14.5)	(31.7)	(22.9)
M. affinis	4326	5407	468	430	979	—	—	231	24865	36706
	(4.4)	(7.6)	(0.5)	(0.5)	(1.5)			(0.5)	(31.7)	(7.0)
P. stylifera	10676	32345	12875	16643	12453	4655	2968	44972	101896	239483
	(14.0)	(45.8)	(14.3)	(18.4)	(19.4)	(70.5)	(82.5)	(92.1)	(129.8)	(45.6)
P. indicus	220	441	58	—	1482	82	—	—	—	2283
	(0.2)	(0.6)	(0.06)		(2.3)	(1.2)	—			(0.4)
Total	29528	67388	33568	25320	30506	5379	3053	52283	151626	
	(37.3)	(95.4)	(37.36)	(28.0)	(47.5)	(81.4)	(87.5)	(107.1)	(193.2)	

Species	1968 Jan.	Feb.	March	April	May	June	Annual Total
M. dobsoni	79627	27018	97711	332237	336635	1914	875142
	(69.7)	(25.4)	(80.5)	(222.2)	(141.4)	(53.1)	(119.4)
M. affinis	13555	1615	1445	300	—	—	16915
	(11.9)	(1.5)	(1.1)	(0.2)			(2.3)
P. stylifera	185777	141631	101170	33844	20924	540	483886
	(162.7)	(133.2)	(83.3)	(22.6)	(8.8)	(1.5)	(66.0)
P. indicus	260	—	—	—	—	—	260
	(0.2)						(0.04)
Total	279219	170264	200326	366381	357559	2454	
	(244.5)	(160.1)	(164.0)	(245.0)	(150.2)	(54.6)	

TABLE 3. *Size ranges of the different species of prawns in the commercial landings at Cannanore for the period* 1965-1968

Period	Species	Length range in mm								
		Jan.	Feb.	March	Apr.	May	June	Oct.	Nov.	Dec.
1965	*M. dobsoni*	75— 85	70- 80	80- 90	90- 95	70- 80	75- 85	75- 85	70- 80	75- 85
	M. affinis	100—120	110-210	100-120	100-125	100-210	100-125	120-130	110-120	100-120
	P. stylifera	70— 75	75- 80	75- 80	70- 75	85- 95	90- 95	75- 80	75- 80	80- 85
	P. indicus	130—135	—	120-125	125-130	120-125	—	—	120-125	—
1966	*M. dobsoni*	70— 80	70- 80	75- 80	70- 80	90- 95	70- 80	80- 90	80- 85	70- 80
	M. affinis	100—120	110-120	110-120	100-120	120-125	100-105	110-130	100-110	120-125
	P. stylifera	80— 85	75- 80	75- 80	80- 85	75- 80	90- 95	80- 85	75- 80	75- 80
	P. indicus	120—125	120-130	—	—	—	—	—	—	130-135
1967	*M. dobsoni*	70— 80	70- 80	90- 95	75- 95	70- 80	70- 80	75- 80	70- 75	80 -90
	M. affinis	110—115	100-105	120-125	110-110	110-120	110-115	125-130	100-115	100-125
	P. stylifera	75— 80	80- 85	70- 75	78- 80	70- 85	90- 95	80- 85	75- 80	70- 80
	P. indicus	120—122	110-120	125-128	—	120-125	120-125	—	—	—
1968	*M. dobsoni*	80— 90	70- 80	90- 95	75- 95	80- 90	80- 90	80- 90	70- 80	80- 90
	M. affinis	100—115	110-115	100-115	100-115	120-125	110-115	125-130	110-120	100-120
	P. stylifera	80— 85	75- 85	75- 80	75- 80	80- 85	90- 95	80- 85	75- 80	70- 80
	P. indicus	120—125	—	125-128	120-125	120-125	—	—	120-125	—

depths of 18 to 20 metres whereas the highest percentage of *M. affinis* was in 21-23 metres, of *P. stylifera* in 15-17 metres and *P. indicus* in relatively deeper regions.

TABLE 4. *Depth-wise distribution of different species of prawns*

Species	Percentage composition			
	Depth range in metres			
	15—17	18—20	21—23	24—26
M.*dobsoni*	20.2	60.8	12.0	7.0
M. *affinis*	10.4	18.6	62.8	8.2
P. *stylifera*	78.4	12.2	5.2	4.2
P. *indicus*	5.2	6.8	20.4	67.6

REMARKS

Tne trawling operations at Cannanore commence after the south-west monsoon season by the second week of October. The peak period of fishing was noted in December. Though the trawl catches mainly consisted of *Metapenaeus dobsoni, M. affinis, P. stylifera* and *P. indicus*, it was observed that *M. dobsoni* dominated the catch, constituting 61.2 per cent. The comparatively high landings of prawns during 1968 was mainly due to the bumper catches of *Metapenaeus dobsoni.* From the information collected it is noted that *P. stylifera* was caught in plenty in the muddy bottom off Cannanore between depths of 15 and 17 metres, whereas *M. dobsoni* and *M. affinis* were found to occur more in the sandy bottom between depths of 18 to 20 metres. The analysis of the depth-wise distribution of the species also suggests that *P. indicus* may occur more in the relatively deeper regions off Cannanore and it may be worth-while to extend the trawling operations beyond 25 metres.

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