

FISHERY OF THE SWIMMING CRAB *PORTUNUS PELAGICUS*
LINNAEUS FROM PALK BAY AND GULF OF MANNAR

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ABSTRACT

Fishery of *Portunus pelagicus* Linnaeus along the Palk Bay and Gulf Mannar is by a type of gill net locally known as *nandu valai*. They are also caught in large numbers in trawls operated by mechanised boats. The monthly catch per unit effort at the three major crab fishing centres Devipattanam, Vedalai and Mandapam is estimated for three years and Vedalai is found to be the most productive centre for crabs. Some information regarding the marketing, disposal, longevity of life outside sea water and sound production are also given.

Portunus pelagicus Linnaeus is largely caught by gill and trawl nets throughout the year from a small area along Palk Bay and Gulf of Mannar. Several notes on the crab fishery and fishing methods of different parts of the Indian region are available in the accounts given by Hora (1935), Chopra

(1939), Jones and Sujansingani (1952), Menon (1952), George and Nayak (1961), Chhapgar (1962), Vedavyasa Rao et al (1973), Prasad and Thampi (1951) have described the fishery and fishing methods for *Portunus pelagicus* from Mandapam area but they have not estimated the total production from this region or catch per unit effort for this commercially important crab. The present account deals with the fishery of *P. pelagicus* from Palk Bay and Gulf of Mannar, the catch per unit effort at the three landing places Devipattanam, Vedalai and Mandapam for the period 1972-74 with some information regarding the marketing, disposal, longevity of this species outside sea water and sound production.

Regular weekly samples of *P. pelagicus* were collected from the three major crab fishing centres viz. Devipattanam (Palk Bay), Vedalai (Gulf of Mannar) and Mandapam (Palk Bay and Gulf of Mannar) for biological studies. Monthly landings of this species were also recorded from Thondi, Thiruppalakudi, Devipattanam, Athankarai, Panaikulam, Dhurgavalasai, Mandapam, Pamban and Rameswaram in Palk Bay and Keelakkarai, Sethukarai, Periyapattanam, Vedalai, Mandapam, Pamban and Rameswaram in Gulf of Mannar for the period from 1972-74. Keelakkarai, Mandapam, Pamban and Rameswaram are the four centres where this species is largely caught by trawl nets operated by the mechanised boats. In trawl nets they form an ancillary catch along with prawns and fishes. The catches by gill and trawl nets were treated separately.

Portunus pelagicus continues to occur throughout the year and the catches by gill and trawl nets were maximum between January and April in all the three years under report (fig 1&2). The trend in the landings during the period 1972-74 is given in Table 1. It would seem that crabs of this species are caught in large quantities in the inshore waters of Palk Bay and Gulf of Mannar for the

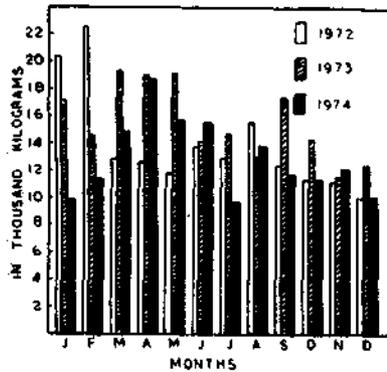


FIG. 1. Monthly landings of *P. pelagicus* by gill nets from Palk Bay and Gulf of Mannar during 1972-74.

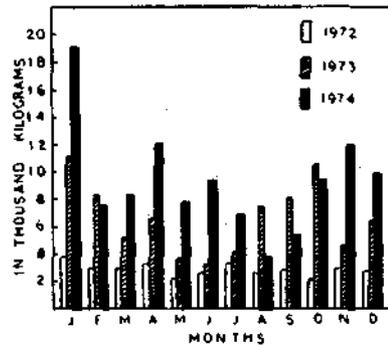


FIG. 2. Monthly landings of *P. pelagicus* by trawl nets from Palk Bay and Gulf of Mannar during 1972-74.

whole year. The average annual catch of *P. pelagicus* from this area is estimated at 246 tonnes. On comparison, the annual production is more than ten times that of Mangalore (George and Nayak 1961) and Malabar coasts (Chidambaram and Venkataraman 1944).

Devipattanam and Vedalai are the two main crab fishing centres where only crab nets are operated by indigenous crafts. Considerable quantities of crabs are also landed by trawl nets in Mandapam. The catch per unit effort for these three centres during the period 1972-74 is given in Table 2. The catch per unit effort shows that Vedalai is the most productive centre for crabs. The use of crab net or *nandu valai*, its design and advantage have been described in detail earlier (Prasad and Thampi 1951). This type of gill net is being operated at a depth of 1 to 2½ fathoms and used exclusively to catch *P. pelagicus* in all the fishing centres here.

The fishery constituted by the size groups ranging from 60-209 mm and includes immature, maturing, mature, spent and spent recovering individuals. The maximum size of male and female was 209 and 204 mm respectively and such large crabs of this species have not been recorded so far. Generally large individuals are common in the trawl net catches. Though the berried females are occurring throughout the year, they are more abundant from January to

TABLE 1. *Estimated monthly landings of Portunus pelagicus during the period 1972-74 from Palk Bay and Gulf of Mannar. (in kg)*

	1972		1973		1974	
	G.N.	T.N.	G.N.	T.N.	G.N.	T.N.
January	20368	3737	17082	11106	9865	19176
February	22502	2924	14559	8380	11352	7642
March	12904	2885	19356	5183	14899	8339
April	12618	3245	19022	6766	18728	12104
May	11786	2253	19180	3642	15750	7822
June	13764	2687	14176	3271	15583	9426
July	13007	3311	14733	4237	9690	6961
August	15583	2681	13060	7621	13812	3860
September	12446	2869	17344	8249	11678	5466
October	11338	2222	14374	10656	11385	9553
November	11208	2967	11655	4739	12188	12067
December	10051	2844	12467	6494	10139	9971

G. N. — Gill net (Crab net), T. N. — Trawl net.,

TABLE 2. Monthly catch per unit effort at Devipattanam, Vedalai and Mandapam (in kg) by gill nets

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
DEVIPATTANAM												
1972	31.27	29.54	13.70	14.24	12.09	9.49	10.65	15.78	5.79	6.10	6.81	4.94
1973	24.18	13.15	18.15	10.58	9.17	16.09	17.27	20.30	24.98	16.67	15.57	53.79
1974	5.28	22.85	24.91	29.97	29.40	12.72	6.68	15.26	11.46	7.59	9.69	7.55
VEDALAI												
1972	18.54	27.20	30.58	16.26	28.98	45.02	27.66	17.36	16.13	26.78	27.19	23.37
1973	38.31	18.94	86.92	152.65	97.78	46.24	80.50	32.82	35.95	19.05	6.47	10.63
1974	16.10	18.31	50.35	44.72	34.25	21.92	9.54	10.17	12.76	15.23	13.89	16.10
MANDAPAM												
1972	3.42	1.87	2.51	2.56	0.78	0.88	3.00	2.04	2.17	0.97	2.07	1.82
1973	2.11	1.70	2.12	0.99	0.87	1.20	4.06	7.14	3.26	5.28	1.71	0.95
1974	2.97	3.97	3.90	4.22	9.25	8.78	2.66	2.52	3.27	4.79	10.65	15.37

March and also from September to December to some extent. This agreed to the breeding season observed earlier (Prasad and Tampi 1953). Berried females are always more in the catches by trawl nets than by gill nets. This shows that the females are moving towards deeper waters for breeding.

As crab meat has become popular among the people, there is very great demand in all the places. The crabs caught from the landing places are arranged upside down in bamboo-baskets and brought to the nearest markets around about 30 kilometers by bicycles. In the markets they are also placed upside down for ready sales. This method helps to keep them in fresh condition for more than 10 h. If the crabs are placed in normal position, the fluid waste and water from the stomach and body cavity oozes out freely and causes great damage. The crabs which are removed from the gill nets and placed outside sea can very well survive when they are put under sea water even after 2 h. The heart beat was observed in some crabs after 5 hours of their removal from the nets. But, they are very sensitive and die quickly compared to *Scylla serrata* (Forsk.) which can live with cotton soaked in sea water for about 17-18 days (Vasudeo and Kewalramani 1960).

The crabs of this species produces sound when they are immediately removed from the gill nets. The noise comes out from the mouth when they eject the water with air which can be clearly seen as bubbles around the mouth parts.

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