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An account of the Fishery and fishing methods for  
*Neptunus pelagicus* (Linnaeus) near Mandapam

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# An account of the Fishery and Fishing methods for *Neptunus pelagicus* (Linnaeus) near Mandapam.\*

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With 3 Text-figures

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2/ A study of the bionomics, life history and other related problems of *Neptunus pelagicus*, the common edible crab of the Gulf of Manaar and the Palk Bay was started because it was felt desirable to investigate this crab and its fishery to forestall the possibility of damage to the stock through injudicious exploitation. Some information regarding the Indian crab fishery is available in the accounts given by Rao (1933), Hora (1935), Chopra (1936 and 1939), Reddy (1936) and also in *The Wealth of India* published by the Council of Scientific and Industrial Research of India (1950). As Chopra (1936) pointed out: "That even elementary principles of safeguarding the industry are ignored at present can be judged from the fact that intensive fishing is sometimes carried out even during the season when the females are breeding and it is by no means uncommon to see females in berry being openly sold in the markets."

The method of fishing for *Neptunus* described in this paper is prevalent in many places and as there is no published account of this efficient yet simple device it was thought worthwhile to record the same. The results of the investigation on the biology and other problems related to *N. pelagicus* will be published in course of time.

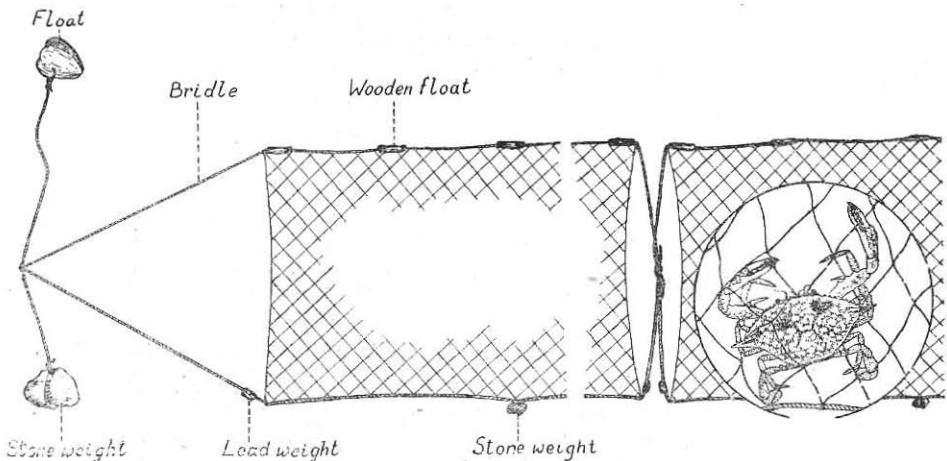
Next to *Scylla serrata*, which forms the basis of a very extensive fishing all along the coasts, two species of *Neptunus*—*N. pelagicus* and *N. sanguinolentus* are largely exploited as they are the largest, meatiest, best flavoured and the most abundant of our edible crabs. *Varuna litterata* is also fished on a small scale but on account of its small size it does not fetch much price. *S. serrata* is captured mainly from backwaters and estuaries while considerable numbers of the two species of *Neptunus* are more commonly fished from the sea. *N. pelagicus* like *S. serrata* and *V. litterata* enjoys a wide distribution in the Indo-Pacific region, from the Mediterranean and eastern coast of Africa to Japan, Philippines, Australia, New Zealand and Oceania (Delsman & De Man, 1925).

*N. pelagicus* and *N. sanguinolentus* are caught in large numbers from Febru-

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ary to May along the southwest coast. In Madras the season extends from March to June. Still further south, in the Palk Bay and in the Gulf of Manaar, the fishing may start even in December lasting until about June and in places like Tirupalakudi it extends for the whole year. However, during times when there is other fishing, fishermen usually neglect the crabs. Important centres where crabs are caught in the Palk Bay and in the Gulf of Manaar are Tirupalakudi, Devipattinam, Rameswaram and Vedalai near Mandapam. At all these places *N. pelagicus* forms the main catch with stray individuals of *S. serrata*. In several places where *N. pelagicus* is fished, *N. sanguinolentus* is also obtained. However, in the Mandapam area *N. sanguinolentus* has not been observed in the commercial catches. At this stage it is not possible to offer any explanation for this.

The gear used in all these places is a net locally known as *nandu valai* (Tamil) or crab net. It resembles somewhat a small gill-net or a wall net. Each net is 300 feet in length and 2 feet in width or height. The body of the net is made of cotton yarn (count 20) with 2 inch square meshes. The head rope, also of cotton, is about  $\frac{1}{8}$  inch in diameter and small wooden floats are tied to it at intervals of about one and a half feet. Each float is a small piece of wood  $5\frac{1}{2}$  inches in length,  $\frac{3}{4}$  inch broad and nearly  $\frac{1}{4}$  inch in thickness. The foot rope,



TEXT-FIG. I. A diagrammatic representation of one end of a chain of crab nets used in Vedalai. The inset shows how the crabs get entangled.

made of cotton, is slightly stouter than the head rope and measures about  $\frac{1}{8}$  inch in diameter. Stone weights are attached to this (opposite alternate floats) so that when the net is left in the water the foot rope touches the bottom due to the weights and at the same time the net is kept stretched vertically by the buoyancy of the floats. On either ends of each net are two bridles  $2\frac{1}{2}$  feet in length with which the nets are lashed together in series. A small lead weight is attached to the lower bridle at the proximal end of it. A rope with a sinker (usually a

stone) and a float (a dry cocoanut) is tied to the bridles at the extreme ends of the chain of nets (Text-fig. 1). These two floats indicate the position of the net. The above description is that of nets used in Vedalai. Individual variations, however, have been noticed in size and other details of crab nets used in different localities (Table 1).



TEXT-FIG. 2. Crab net with crabs entangled in the meshes.



TEXT-FIG. 3. A group of crabs removed from a net.

The nets are used in fleets; several of them tied end to end (the number of nets forming a chain varies from place to place) so that they extend for a con-

siderable distance in the sea. Fishing operations are conducted by two men usually from dug-out canoes. They go out in the evening carrying a fleet of these nets and while one person handles the canoe the other lays the net at a depth of nearly a fathom and about 150 to 200 yards from the shore. The nets are laid parallel to the coast line always on a sandy or muddy bottom. These are left overnight and by sunrise the subsequent day the nets are hauled in from one end. The crabs which try to cross the long chain of nets that form a sort of wall get themselves entangled in the meshes and being of a "foolishly tenacious nature" they cling to the nets [Text-fig. 2,]. The crabs are thus brought to the shore alive and removing them from the nets is a matter of patience and skill. With the aid of a light stick boys continuously tap the carapace of the crabs until the chelae with which they tenaciously hold on to the cords are released. In some cases they may even have to be removed by breaking the claws. Text-fig. 3 shows a group of crabs removed from a net.

TABLE I.—*Measurements and other details of crab nets from four different crab fishing centres*

LOCALITY	LENGTH OF EACH NET	HEIGHT	MESH	MATERIAL	OTHER DETAILS
Vedalai 9°15'45"N 79°06'15"E	300 ft.	2 ft.	2 inch square	Cotton. Body of net made of yarn count 20	Usually six nets are tied end to end forming a fleet of nets. (Also see text).
Tirupalakudi 9°32'45"N 78°55'00"E	450 ft.	3 ft.	3 inch square	...	Head rope $\frac{3}{32}$ in. diameter; foot rope $\frac{1}{8}$ in. dia., 100 floats tied $4\frac{1}{2}$ feet apart, each $4 \times \frac{15}{16} \times 5 \frac{1}{16}$ in. No weights attached to the foot rope. Usually 10 nets form a fleet.
Devipattinam 9°28'51"N 78°54'00"E	360 ft.	3 ft.	2 inch square	...	Head rope $\frac{1}{16}$ to $\frac{1}{10}$ in. dia., foot rope $\frac{1}{8}$ in., 60 floats each $5 \times 1\frac{1}{2} \times \frac{3}{4}$ in. attached 6 feet apart and no weights on the foot rope.
Rameswaram 9°17'42"N 79°19'30"E	384 ft.	2 ft.	...	...	Head rope $\frac{1}{10}$ in., foot rope $\frac{1}{8}$ in., 64 floats each $6 \times \frac{1}{2} \times \frac{3}{16}$ in. attached 6 feet apart. No weights on the foot rope. Usually 6 nets are used in a fleet.

In the tidal areas along the coast, crabs are sometimes even chased and caught with hands without the aid of any implements or are speared by sharpened

sticks. It may be mentioned here that other methods are in vogue for catching crabs in our country and these have been described by Hora (1935) and in the Government of India Agricultural Marketing Report (1941).

The daily landings of *Neptunus* in Vedalai vary considerably, but usually the number does not exceed 500. The crabs are immediately transported by headloads to the neighbouring markets where they are sold at the rate of two or three for an anna depending on their size.

Crab fishing in India on the whole is not as commercially important as it is in the Western countries. This is evident from the daily landings in many centres. The extremely perishable nature of the commodity and the lack of adequate transport have throttled the development of the industry to a great extent. It is also possible that the meat eating population of our country has not yet developed a taste for crab meat and consequently there has not been so far any great demand for this sea food. These are probably some of the reasons why fishermen have not taken to this fishery in any large scale. Crab fishing at present in many places is often resorted to as an off-season activity although it should be mentioned with advantage that the methods employed are very inexpensive but efficient and without much modifications and improvements the prevailing tackles can be used more extensively.

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