

**ON THE OCCURRENCE OF PALINURID SPINY LOBSTER
IN THE COCHIN BACKWATERS**

THE unusual occurrence of spiny lobsters belonging to the genus *Panulirus* within the Port of Cochin was noted with special interest. Spiny lobsters either juveniles or adults have not hitherto been recorded or reported from this estuarine locality. Sometime back while testing the performance of a trawling gear in a shallow muddy bottom within 3 to 4 meters depth inside the Cochin backwaters near Edacochin Kayal, (Fig. 1) 8 specimens of spiny lobsters were obtained during three repeated hauls made within an area of one square mile. These lobsters were caught along with other trash fishes including a few crabs, squilla and prawns.

The lobsters were brought to the laboratory and were later identified as *Panulirus polyphagus* (Herbst). The total length and weight of each individual was noted and presented in the accompanying Table.

TABLE I

Ser. No.	Total length in MM. (anterior tip of carapace to end of telson)	Weight in gms.
1	127	48.0
2	115	44.0
3	110	40.0
4	102	28.5
5	108	38.0
6	102	29.0
7	106	37.5
8	104	33.0

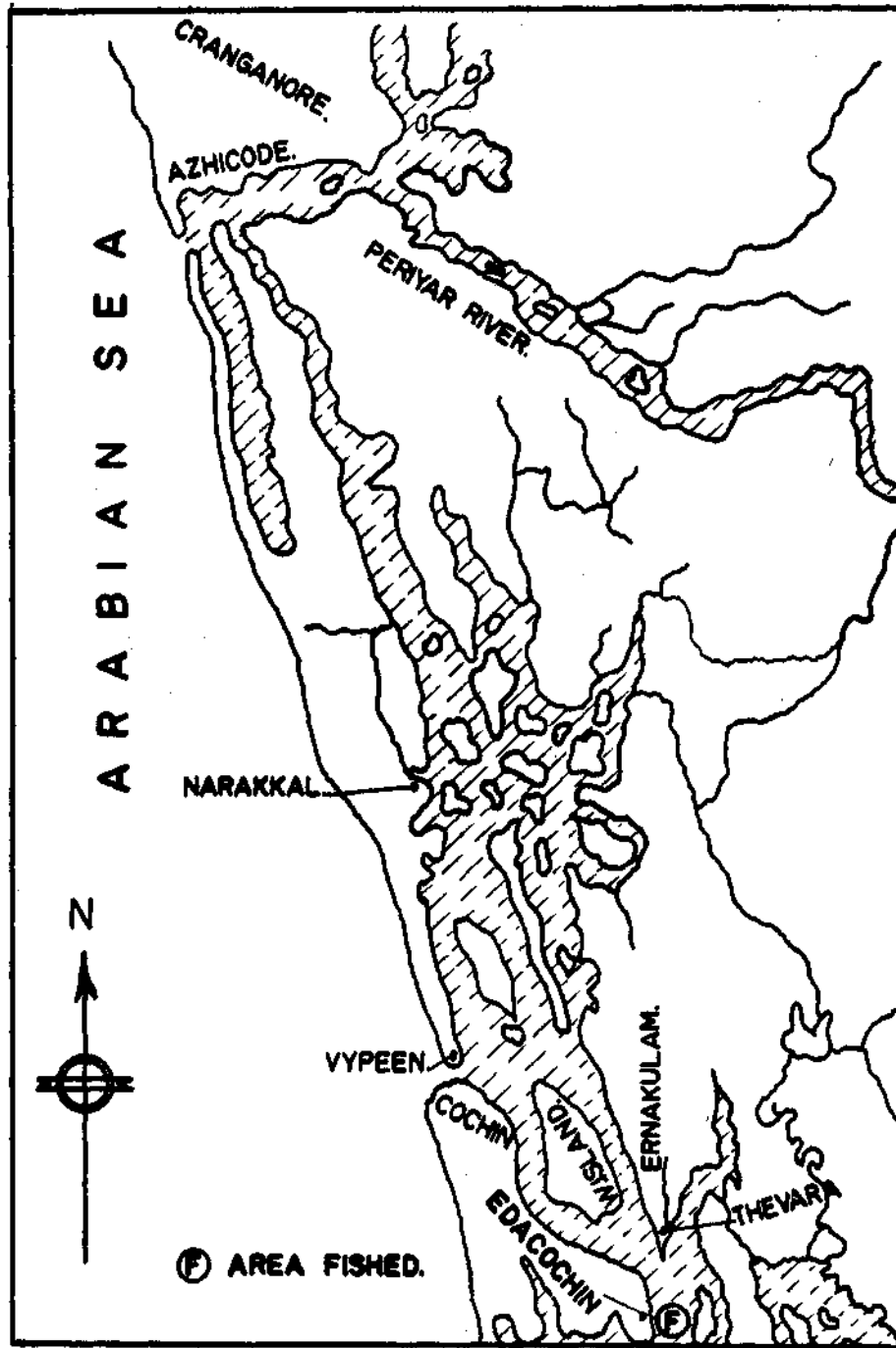


Fig. 1. Showing area fished (F) in the Cochin backwaters

When compared with the general length and weight of individuals that normally form the commercial catch, the present specimens are undoubtedly juvenile forms of *Panulirus polyphagus*.

The Port of Cochin lies in the Cochin backwaters which forms a part of the great Vembanad lake with a permanent connection with the adjoining sea. There is also a temporary connection with the sea near Azhicode. The entire area is estuarine in nature. Flow reversals, as a result of tidal action, occur regularly far interior. On maximum ebb tides water velocities approach nearly 3 knots speed. Water salinity ranges from nearly fresh-water condition (immediately after heavy monsoon rains) to a highly saline condition as that of the adjoining sea-water. Within the Port of Cochin, there are no submerged rocks or any coral beds. There is no well established lobster fishery anywhere within the backwaters or in the sea around Cochin. The nearest lobster fishing grounds are about 100 to 180 miles away both north and south of Cochin. Though at present little is known on the movements of lobsters, it is still not definitely known about their long distance travel in which case it may be presumed that these individuals might have ingressed into the backwaters during the course of their migration along the coast from their normal fishing grounds. Considering their juvenile sizes, it might be possible that the early larval forms during their planktonic dispersal might have been brought into the backwaters through water movements and they would have grown to the present size unmolested.

Crayfish larvae have been taken at considerable distances off-shore in Western Australia (Report from HMAS Diamantina) and it is known that on their hatching the larval crayfish or phyllosomae are carried far out to sea by ocean currents. At a later stage of development these young larvae return to their normal habitat and settle as immature crayfish where they grow to adult size. It is also known that the phyllosoma larvae of lobsters have a wide distribution till they settle down to their special substratum which takes nearly 7 months of larval life. Since *P. polyphagus* is not definitely endemic to these backwaters, the only possibility is that the present individuals should have come from a different ecological source.

During the lobster fishing experiments conducted by the author (Balasubramanyan, *et al.* 1960 and 1961) between 1958 to 1961 along the south-west of India, only one specimen of *P. polyphagus* measuring 36 cm. in length and weighing 1.36 kg. was caught from a sandy bottom at a depth of 10 meters while the rest of the catches were taken exclusively from rocky substratum. It was then considered to be a casual straying individual but subsequent observations prove to show that specimens of *P. polyphagus* are available also on muddy bottoms devoid of submerged rocks and coral beds. In western Australian waters and around Ceylon coast *P. polyphagus* have been reported from muddy substratum quite frequently, (George 1966; De Bruin 1962). The present observation suggests that *P. polyphagus* unlike the other rock dwelling lobsters (*P. ornatus*; *P. dasyopus*; *P. versicolor*; *P. penicillatus* and *P. japonicus*) does not exclusively confine themselves to live on rocky beds but disperses to other adjoining shallow sandy and muddy areas.

However, on account of the very wide fluctuations in the hydrographic conditions prevailing within the Port of Cochin during the monsoon months of every year,

(1966 data : Salinity 1.25‰ to 35.4‰

Water temperature : 28°C.-31°C.

Dissolved oxygen 3.5 mL/L to 6.4 mL/L)

it is quite doubtful whether this species of lobster could permanently settle and establish itself after having found an entry into this new ecological niche from the open sea. If that is so, lobster culture or its farming will be worth a trial. Though several attempts have been made in other parts of the world to grow juvenile crayfish, experiments conducted in the New Zealand laboratory have met with some success (Kensler, 1967). Considering the commercial importance for the Indian rock lobsters, detailed investigations on their movements form an important subject for further studies. The probable range of dispersal of the planktonic larvae as well as the post-larval forms and the movements of the adult stock have to be assessed as has been done for the Japanese spiny lobster *P. japonicus* by Harada (1957).

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