

ON THE LOCATION OF A NURSERY GROUND OF THE
GIANT PRAWN *MACROBRACHIUM ROSENBERGII* (de MAN)

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ON THE LOCATION OF A NURSERY-GROUND OF THE GIANT PRAWN
MACROBRACHIUM ROSENBERGII (de MAN)*

IN the course of an investigation extending over the past four years on the biology and fishery of *M. rosenbergii* in the Vembanad Lake and Pamba River in Kerala State, some interesting observations have been made in regard to the distribution of the juvenile prawns.

The species supports a rich fishery in the backwaters and rivers of Central Kerala, the importance of which has risen steadily in recent years with the increase in demand for frozen shrimps in foreign markets. The fishing season extends from May to November. Spent specimens and early larval stages are available only in the backwaters during August to December, thus indicating clearly the place and time of breeding. This observation relating to the distribution of the early larvæ is in agreement with those of Menon (1938) and John (1957). From breeding experiments conducted in Malaya, Ling and Merican (1961) are inclined to believe that survival of the larvæ requires a certain amount of sea-water and that they "under natural conditions live in brackish-water".

In order to trace the distribution of the species, especially of young ones in the Pamba river, five stations about 10 miles apart were fixed along its course for regular observations during the off-season from January to May (Ref.: map). Juveniles of the species measuring 30-160 mm. were first recorded in January 1961, in the catches of a type of drag net locally called *Peru vala* landed at about 3 miles east of Pulikizh (the third observation station). This place is a regular landing centre of riverine fishes among which juveniles of *M. rosenbergii* are found along with those of *M. rudis*, *M. idæ* and *M. malcolmsoni* during the period, January to May. The catches come from a stretch of the river about 10 miles long, extending equally on both sides of Pulikizh.

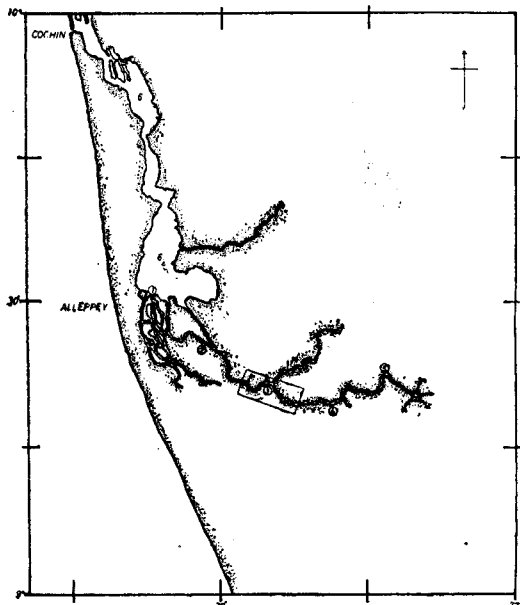
The peculiarity of this area is that the river at this point is rather deep in places (even up to 12 metres). These deeper parts are known in the locality as *kayam*. The Manimala stream, a tributary of Pamba, joins it near this point. The water is fresh throughout, the saline influence becoming evident only lower down at Ramankari and Pallathuruthu. The bottom of the *kayam* is generally of loose mud with plenty of organic detritus, unlike the shallow regions of the river which are sandy at the bottom.

Juveniles of *M. rosenbergii* can easily be distinguished from those of the other species by the presence of parallel longitudinal lines on the carapace. In others such lines are either absent or when present are transverse in disposition.

The data pertaining to the samples of *M. rosenbergii* from this centre for the five months, January to May 1961, are presented in Table I.

It can be seen from Table I that along with the juvenile prawns a small proportion of large males are also encountered. But large females are conspicuous by their absence. The occurrence of these juveniles in large numbers in this area during the same period has been confirmed in 1962 and 1963.

They are found to feed actively on a variety of animal and vegetable matter from among the bottom debris. It was also interesting to note fish remains in the stomachs.



Map showing the Vembanad Lake and Pamba River with the observation stations. (1) Pallathuruthu; (2) Ramankari; (3) Pulikizh; (4) Arannura; (5) Ramt; (6) Vembanad Lake. Nursery area in the river shown enclosed within rectangle.

TABLE II

Month	Size range (mm.)		Modal size-groups (mm.)		Sex ratio %		Juveniles up to 100 mm. %
	♂	♀	♂	♀	♂	♀	
January ..	58-234	30-87	61-80, 141-160 and 221-240	61-80 and 141-160	51.7	48.3	55.2
February ..	61-260	34-164	61-80, 181-200 and 221-240	41-60	46.4	53.6	67.5
March ..	60-238	51-148	61-80, 141-160 and 221-240	81-100 and 141-160	62.1	37.9	54.7
April ..	68-217	56-133	101-120 and 161-180	81-100 and 101-120	56.7	43.3	39.2
May ..	61-260	61-170	101-120 and 161-180	81-100 and 101-120	67.1	32.9	30.3

It is possible that other areas in the river systems associated with the Vembanad lake with similar ecological conditions might also prove to be valuable nursery grounds of the species. During certain years it has been observed that these juveniles move down the river from March onwards probably under the influence of currents resulting from occasional showers. It is suggested therefore that the best time for collection of juveniles for purposes of culture is January and February when the percentage of juveniles below 100 mm. is also high (Table I). The author has observed during the course of this work that the juveniles have a habit of hiding in crevices or among submerged plants along the river banks. This observation can be of practical use in their collection for stocking and culture.

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