

**M.S.45. PREMALATHA, P.—Studies on the larvae of carangid fishes along the south west coast of India—1984—**

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Studies on the larvae of carangid fishes along the south west coast of India were carried out based on the regular plankton collections of the UNDP/FAO/Pelagic Fishery Project during the period 1971 to 1975. The area of collection extended from Ratnagiri to Tuticorin between the latitude 17°00'N to 07°00'N and longitude 71°E to 79°30'E. Regular and systematic sampling were made along fixed profiles mostly from shelf waters and some beyond the continental shelf. The plankton collections were made with standard sampling gears viz. Bongo 20 and Bongo 60 cm with a mesh size of 0.505 mm from the research vessels 'Restrelliger' and 'Sardinella'.

Out of the 1284 plankton stations worked, 531 samples contained 3284 carangid larvae and this formed about 7% of the total larval biomass. Major emphasis were given to the study of early developmental stages and distribution and abundance in relation to hydrographic parameters. Early developmental stages of six species viz. *Megalaspis cordyla*, *Decapterus dayi*, *Alepes kalla*, *Alectis ciliaris*, *A. indicus* and *Atropus atropus* which were of commercial importance along the south west coast of India were studied in detail. The identification of the larvae were mainly based on meristic and morphometric of the adults. Juvenile carangids obtained in the pelagic trawls were also utilised for further confirmation of the species.

**Megalaspis cordyla.** Out of 660 number of larvae and post-larvae, 24 stages ranging from 2.2 mm to 40.0 mm were studied in detail.

**Decapterus dayi.** Out of 656 number of different stages 21 stages from 2.2 mm to 40.0 mm were described in detail.

**Alepes kalla.** 320 larvae and post-larvae were obtained for the present study, 20 different stages from 2.0 mm to 40.0 mm were studied in detail.

**Alectis ciliaris.** 48 different stages ranging from 4.0 mm to 8.0 mm were obtained for the present study.

**Alectis indicus.** 35 different stages from 2.7 mm to 7.0 mm were studied in detail.

**Atropus atropus.** 41 different stages from 3.4 mm to 8.3 mm were studied in detail.

The quantitative study thrown sufficient light on the distribution and abundance pattern of carangid larvae as a whole and different species separately. The seasonal distribution and abundance of carangid larvae and direct correlation with the hydrographic parameters of the area under study. It had also been observed that the distribution of the larvae were directly related to upwelling and plankton production. In general, there is a gradual increase in abundance of larvae from May onwards with a peak in July, which appeared to be in correlation with the south west monsoon. But there are variations in individual species. In the case of *M.cordyla* the peak season was in the month of June, while *D. dayi*

showed a bimodal peak-one in June and other in September-October months. The larvae of *A. kalla* were more abundant from July to October, showing a tendency of prolonged breeding season. The larvae of *A. ciliaris* were found maximum during March-April period. The peak season for *A. indicus* was observed during February - April months. For *A. atropus* May-June months showed highest abundance.

The spatial distribution showed that carangid larvae in general were delineated into two areas as north and south. Larval abundance was more towards the southern region between Cochin and Cape Comorin, than at Calicut to Ratnagiri area. Larvae of *M. cordyla* were found more towards Calicut and Karwar regions, whereas larvae of *D. dayi* occurred more frequently in the southern areas. The larvae of *A. kalla* showed maximum occurrence in Cochin and Kasargod areas. In the case of *A. ciliaris* the larval occurrence was maximum at Quilon and Ratnagiri. Larvae of *A. indicus* showed maximum occurrence towards north, most abundant being at Calicut. Larvae of *A. atropus* showed maximum abundance at Cochin and Cape Comorin areas. The observation on horizontal distribution showed the maximum larval concentration along the mid shelf waters. Analysis of day and night collections showed that carangid larvae were present more in the day collections. Of the six species studied, three of them namely *M. cordyla*, *A. kalla*, and *A. atropus* were more in the day collections, whereas *D. dayi*, *A. ciliaris* and *A. indicus* were obtained more in the night collections. Since carangid fishes form an important component in the total marine landings in India, the need for its proper exploitation and utilisation is also discussed briefly.