A NOTE ON THE OCCURRENCE OF MATURE OILSARDINE, *SARDINELLA LONGICEPS* VAL., OFF MADRAS COAST

J. C. GNANAMUTTU AND K. .G GIRIJAVALLABHAN
Madras Research Centre of Central Marine Fisheries Research Institute, Madras.

ABSTRACT

The occurrence of mature oilsardine, *Sardinella longiceps*, during January-March of 1978 in Madras waters is reported and its significance discussed. The size ranges of *S. longiceps* in the different months of their occurrence are given.

During 1977-78 we have collected some information on length composition maturity and spawning of the oilsardine, *Sardinella longiceps*, from the Madras coast. Paucity of information on maturity and spawning of *S. longiceps* of this region has led us to present in this report the results of our limited studies on these aspects.

S. longiceps, though forming one of the major pelagic resources on the west coast, does not form a regular fishery along the east coast, but is caught in very small quantities sporadically along with lesser sardines such as *S. dayi* and *S. gibbosa*, in gillnets. The duration of its occurrence is between September and March.

Investigations on maturity and spawning and occurrence of pelagic eggs of oil sardine on the west and east coasts were carried out by many earlier workers. Antony Raja (1969) after having reviewed these studies concluded that "June-October period could safely be assumed as the season of spawning for oilsardine of west coast." Lazarus (1976) recorded the presence of ripe oil sardine during August, about 5 km off Vizhinjam. The present record of mature (Stages IV and V) oil sardine from January to March from Madras is the first one from the east coast.

The field key given by Antony Raja (1969) has been adopted for determining the maturity stages. In September and December 1977, the fish examined were all in immature condition. From January to March only the fish in advanced stages of maturity (IV and V), with the gonads occupying the entire body cavity, were obtained in the catches. Though the occurrence of stages IV and V of maturation during January-March period should be considered as having some significance, it is not sufficient to establish the

spawning period of the fish as it may probably take about a month or two for their ova to reach the full growth and actual consummation of spawning. The diameter distribution of the intraovarian eggs of mature (stage V) fish obtained in January 1978 is depicted in Figure 1. It is clear from the figure that there is a bimodal distribution of the intraovarian eggs, the very advanced eggs at 35-36 m.d. (0.630-0.648 mm) and the less-developed ones at 21-22 m.d. (0.378-0.396 mm). The size distribution of the intraovarian eggs of the mature fish (Stage V) examined bore close resemblance to those studied by Antony Raja (1969) on the west coast.

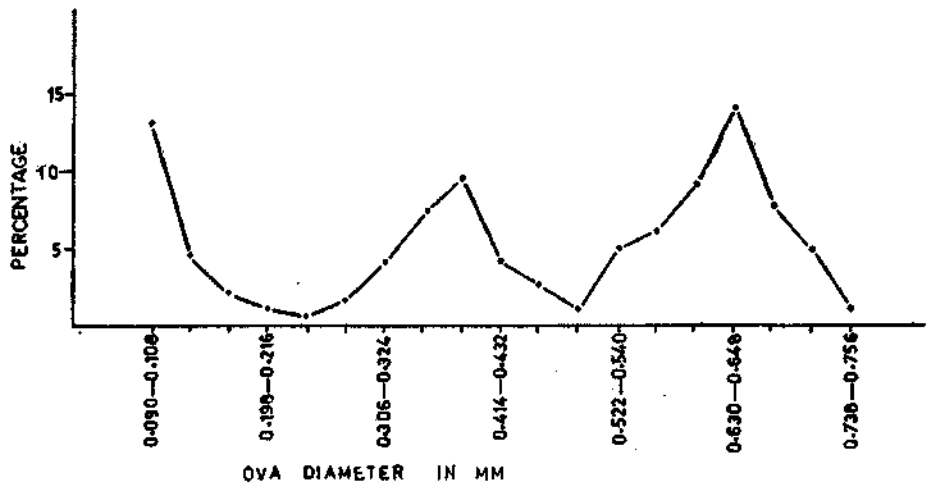

FIG. 1. Ova-diameter frequency of oilsardine in maturity stage V.

The presence of the mature fish off Madras from January to March may be of significance as it is suggestive of an imminent spawning in areas around Madras.

The size ranges of the fish obtained by gillnet (Kavallai Valai) in different months were 139-145 mm (total length) in September, 126-139 mm in December, 141-195 mm in January, 141-156 mm in February, and 142-155 mm in March. A large majority of individuals belonged to 150-159 mm group was the only feature that stood out in the length frequency analysis. The sex ratio of the mature fish revealed that males predominated in the catches.

We are thankful to Dr. E. G. Silas, Director, Central Marine Fisheries Research Institute, for encouragement and to Mr. T. Tholasilingam and Dr. M. D. K. Kuthalingam for critically going through the manuscript.

ANTONY RAJA, B. T. 1969. CMFRI *Bulletin*, No. 16. Central Marine Fisheries Research Institute.

LAZARUS, S. 1976. *Indian J. Fish*, 23 (1 and 2): 249-251.