REFERENCES

A NOTE ON THE SPAWNING HABIT AND FECUNDITY OF *JOHNIUS VOGLERI* (BLEEKER) FROM VERAVAL COAST

ABSTRACT

The spawning habit and fecundity of *Johnius vogleri* from Veraval area has been studied. Fecundity in this species varied from 78,447 to 3,41,178 with an average of 1,54,202 eggs. The relationship between fecundity and length was $\text{Log F} = -2.2632 + 3.1559 \text{ Log L}$, the co-relation coefficient r was 0.9460, ovary weight and fecundity relationship was $\text{Log F} = 1.1702 + 0.9647 \text{ Log OW}$ and the relationship between fish weight and fecundity was $\text{Log F} = 0.0406 + 0.8905 \text{ Log FW}$.

GUJARAT State accounts for 35,242 tonnes of sciaenids annualy (Anon., 1982). At Veraval, the fishery is supported by larger species like *Pseudosciaena brunneus* and *Pseudosciaena diacanthus* and smaller species locally known as 'Dhoma' *viz. Otolithus cuvieri, Otolithus ruber, Johnieops vogleri, J. glauca, J. belengerii, J. dussumieri* which contribute to about 20-25% of the trawl catches.

From Bombay, Muthiah (1982) reported on the biology of *J. vogleri* based on the

samples obtained from trawl catches landed at Sassoon Dock. Since no information on the biology of this species was available from Saurashtra Coast, observations on the spawning habits and fecundity of *J. vogleri* were made during 1983 to 1984 and the results are presented in this note.

Figure 1 shows the frequency polygon of ova in stages IV-V. In ovaries collected during February - March (Fig. 1 a) three modes are discernible, one at 30 md (a), the second at 27 md (b) and the third at 20 md (c) and ova falling under these modes are fully yolked. In Fig. 1 b is shown the progression of modes,
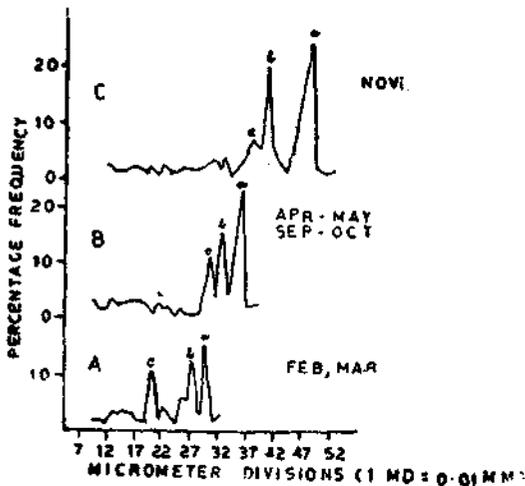

Fig. 1. Ova diameter frequency polygon of *Johnius vogleri* (bleeker).

mature ova forming modes at 37 md (a), 35 md (b) and 31 md (c) respectively thus showing increase in size in the batches. These ovaries were obtained from specimens during the period April - May. Similar modes were also noticed in the ovaries obtained during the period September - October.

In the ripe ovaries obtained in November from specimens whose total length varied from 272 to 326 mm the fully matured ova formed two modes, one at 40 md and another at 49 md (Fig. 1 c). Besides another mode was also seen at 38 md formed by mature ova. The ova falling under the modes 40 md and 49 md are fully transparent each with few oil globules. Observations could not be made during the intervening period of June-August '84 since specimens of *J. vogleri* could not be obtained due to cessation of fishing during the monsoon.

From the above observations it may be stated that in *J. vogleri* first spawning might be taking place during the pre-monsoon period, *i. e.*, June-Jully and the other during October-November as revealed by the presence of ripe and spent fish during October-November. Even though ripe and spent individuals could not be obtained during the period June-August due to non-availability of samples, during the later part of September, 1984 and also during December-January, juveniles of *J. vogleri* measuring 50-66 mm were found in the trawl catches. Similar observations were also made by Muthiah (1982) from Bombay waters. Further he had also reported that he could come across specimens with oozing ova during June-July and again in October and November. Therefore, it is concluded that along the west coast the spawning period of *J. vogleri* is first during June-July and again during Post monsoon period *i. e.*, October - November.

Fecundity

Fecundity in *J. vogleri* varied from 78,447 to 3,41,178 with an average value of 1,54,202 eggs. It was observed that generally the fecundity increased with length and the weight of ovary, but varied with weight of fish.

The relationship between fecundity and length was found to be : Log $F = -2.2632 + 3.1559$ Log L.

The co-relation co-efficient r was : 0.9460.

The relationship between ovary weight (OW) and fecundity (F) was estimated as :

$$\text{Log F} = 1.1702 + 0.9647 \text{ Log OW.}$$

The value of correlation co-efficient r was : 0.3731.

The relationship between fish weight (FW) and fecundity (F) could be expressed as :

$$\text{Log F} = 0.0406 + 0.8905 \text{ Log FW.}$$

The value of correlation co-efficient r is : 0.9597.

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