A NOTE ON THE LENGTH-WEIGHT RELATIONSHIP AND RELATIVE CONDITION IN *HERKLOTSICHTHYS PUNCTATUS* (RUPPEL)

R. MARICHAMY

Central Marine Fisheries Research Institute Substation, Tuticorin.

ABSTRACT

An analysis of the length-weight data of *Herklotsichthys punctatus* shows no significant difference between the sexes in the regression coefficient which is found to be very close to 3.0. The relative condition in females appears to be influenced both by the feeding intensity and the onset of maturity whereas in males an improvement in the condition factor coincides with the attainment of maturity.

The present note is a part of a study on the biology and fishery of the spotted herring, *Herklotsichthys punctatus*, carried out at Port Blair, Andamans. The material was drawn twice a week from the shoreseine catches during 1966 and consisted of 249 males in the size range of 68-148 mm and 241 females in the size range 64-144 mm. The total length of the fish was measured to the nearest millimetre from the tip of the snout to the end of the caudal fin. Weight of each fish was recorded to the nearest 0.5 g, after removing the surface moisture. The length-weight relationship was calculated separately for males and females by the method of least squares using the logarithmic form of the exponential equation, $W = aL^b$ where W = weight, L = length and *a* and *b* are constants. The logarithmic regression equations calculated for both males and females were Log W = -5.1415 + 3.0519 Log L and Log W = -5.2042+3.0944 Log L respectively. The analysis of covariance showed that there was no significant difference between the *b* values for males and females. The data were pooled and the common length-weight relationship obtained was Log W = -5.1710 + 3.0722 Log L or $W = 0.000006745\ L^{3.0722}$. The logarithmic values of observed weights and lengths are plotted in Fig. 1 with the regression line based on the above equation fitted.

Following Le Cren (1951), the relative condition factor, k_n was calculated as $w|\hat{w}$, where w is the observed weight and $\hat{w}$, the calculated weight with the object of seeing the extent of its relation to the feeding intensity and maturity cycle. The relationship between condition factor and intensity of feeding is shown in Fig. 2.

It may be seen that there is a general correspondence between the oscillations of the K_n and feeding-intensity values in both sexes. The only exception is that in males the distribution of k_n values differs slightly from the pattern of feeding intensity in July-August and December. The occurrence of high percentage of mature males during February-March and August-September as well as

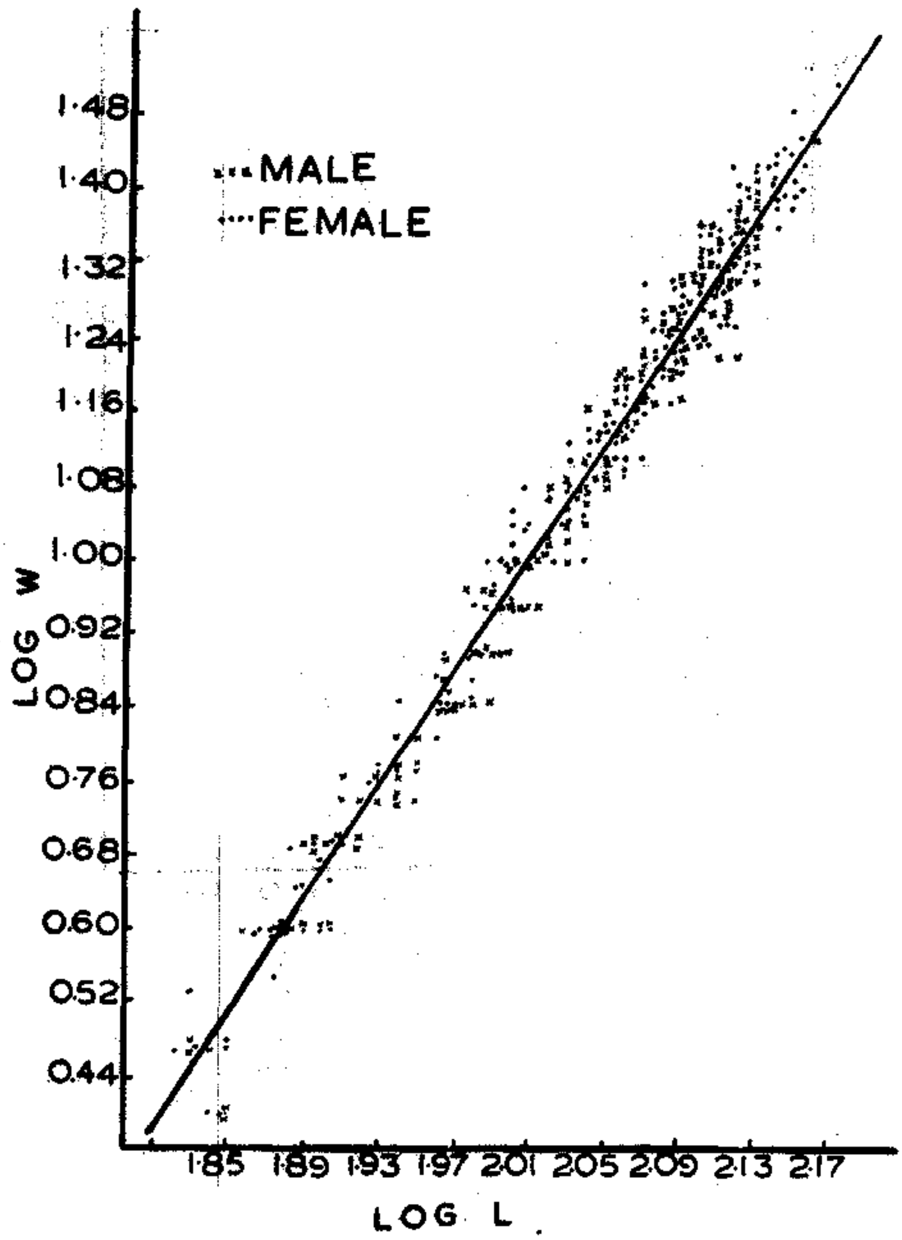

FIG. 1. Logarithmic relation of length and weight in *H. punctatus*.

that of mature females in March-April and in August-September (Marichamy 1972b), can be attributed to the peak k_n values during these periods. Since the influence of active feeding on the k_n values is also obtained in June and December only in females, it appears that in addition to onset of maturity, a phase of

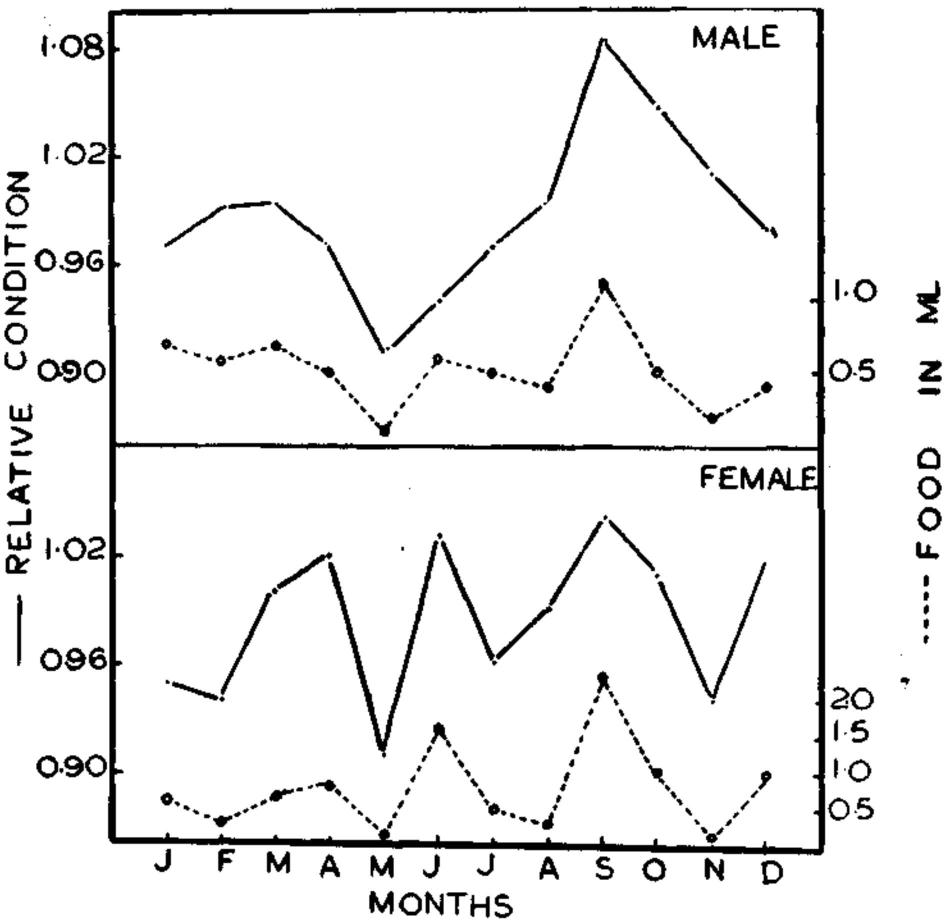

FIG. 2. Variations in the relative condition factor and feeding intensity in *H. punctatus*.

active feeding also contributes to improve the condition factor in that sex. The present observations are also in confirmity with the earlier findings of the author (Marichamy 1972a) that there is no slackening in the feeding activity during the phase of maturation.

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