



Serial No. 5499

ICNAF Res. Doc. 79/VI/124

ANNUAL MEETING - JUNE 1979

Some relationships for the short-finned squid, *Illex illecebrosus*, from the Scotian Shelf

by

A. Mari and E. Valdes
Centro de Investigaciones Pesqueras
Ave. 1^{ra} y 26, Miramar
Ciudad de La Habana, Cuba

INTRODUCTION

In the literature of the past last years there have been published some length-weight relationships for *Illex illecebrosus* (Squires 1957, Mercer 1965). The first includes a length-weight plot, and the second has the length-mantle weight relationship, but none of them include the equations for the fitted lines. Mercer (1973) presented both a length-round weight and a length-mantleweight relationship for males and females of the squid *Illex illecebrosus* (Le Seur). Lange (1979) calculated dorsal mantle-length-total weight relationship for squid *Illex illecebrosus* from the Northwest Atlantic, off the US coast. This paper updates the length-weight relationship, as well as the mantle weight-head weight, total weight-head weight and total weight-mantle weight relationships.

MATERIALS AND METHODS

Specimens used in the analysis were caught during the cruise of the R/V Isla de la Juventud to the Scotian Shelf from 1-12 August. The numbers of individuals employed in the analysis appear in figures 1-2. Dorsal mantle lengths were measured to the nearest centimeter and weight recorded in grams. Mantle weight included fin and gladius, and head weight included the weight of the tentacles. The length-weight curves were calculated using the relationship $W = aL^b$ where;

W = total weight

L = dorsal mantle length

and a and b are constants which were derived from the equation $W = b \ln L + \ln a$. The weight-weight relationships were calculated from the equation $y = bx$, using (y) in some case as the total weight and in others as the mantle weight.

RESULTS

Equations computed by the methods of least squares are as follows:

$$\begin{aligned} \text{Total weight} &= 0.04142 \times L^{2.82661} \\ \text{Head weight} &= 0.04413 \times L^{2.33941} \\ \text{Mantle weight} &= 0.01593 \times L^{3.04604} \\ \text{Total weight} &= 3.98507 \times \text{Head weight} \\ \text{Total weight} &= 1.33586 \times \text{Mantle weight} \\ \text{Mantle weight} &= 2.98363 \times \text{Head weight} \end{aligned}$$

Computed values are given in tables 1 and 2.

REFERENCES

- MERCER, M.C. 1965. Contribution to the biology of the short-finned squid, Illex illecebrosus illecebrosus (LeSueur) in the Newfoundland area. Fish.Res.Bd.Canada. Manuscr. Rept. Ser. (Biol.) 834:36 p.
- MERCER, M.C. 1973. Length-weight relationship of the ommastrephid squid Illex illecebrosus (LeSueur). ICNAF Res.Doc. 72 Serial No. 3024.
- LANGER, A.M.T., and K.L. Johnson. 1979. Dorsal Mantle Length-Total Weight Relationships of Squid (Loligo pealei and Illex illecebrosus) from the Northwest Atlantic, off the Coast of the United States. ICNAF. Res.Doc. 79/II/4, Serial No. 5327.
- SQUIRES, H.J. 1957. Squid, Illex illecebrosus (LeSueur) in the Newfoundland fishing area. J.Fish.Res.Bd.Canada 14:693-728.

Table 1. Length-total weight, length-head weight, length-mantle weight for Squid in the Scotian Shelf

LENGTH	TOTAL WEIGHT	HEAD WEIGHT	MANPLE WEIGHT
15	87.4	25.1	61.3
16	104.9	29.5	74.4
17	124.5	34.3	90.2
18	146.3	38.1	107.1
19	170.5	43.3	125.2
20	197.1	47.0	147.3
21	226.3	55.1	170.3
22	258.1	61.0	196.1
23	292.6	68.2	224.0
24	330.1	75.1	255.0
25	370.4	82.2	288.6

Table 2. Total weight-head weight, total weight-mantle weight for Squid in the Scotian Shelf

TOTAL WEIGHT	HEAD WEIGHT	MANTLE WEIGHT
100	25.1	74.9
20	30.1	90.0
40	35.1	105.0
60	40.2	119.8
80	45.2	134.7
200	50.2	149.7
20	55.2	164.7
40	60.2	179.7
60	65.3	194.6
80	70.3	209.6
300	75.3	224.6

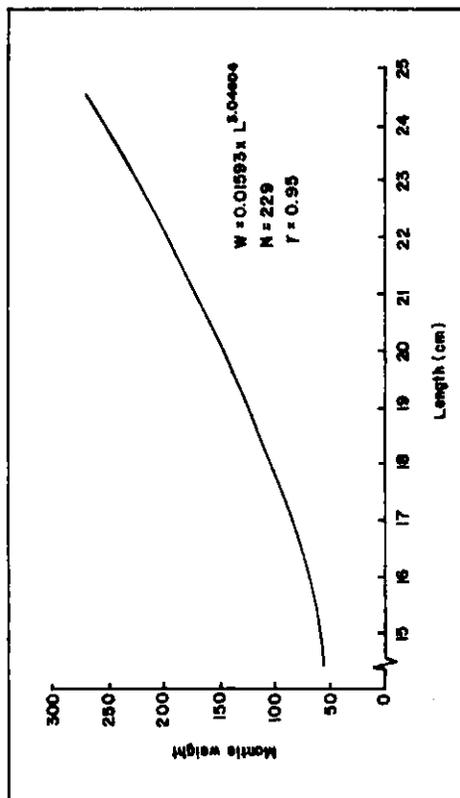
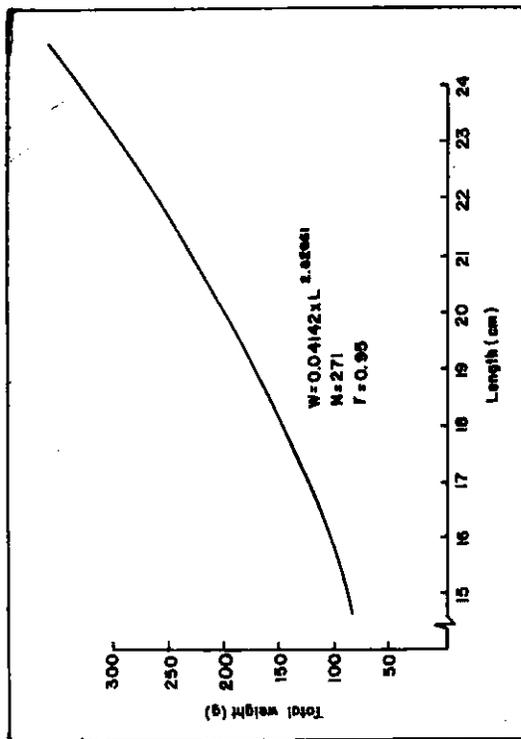
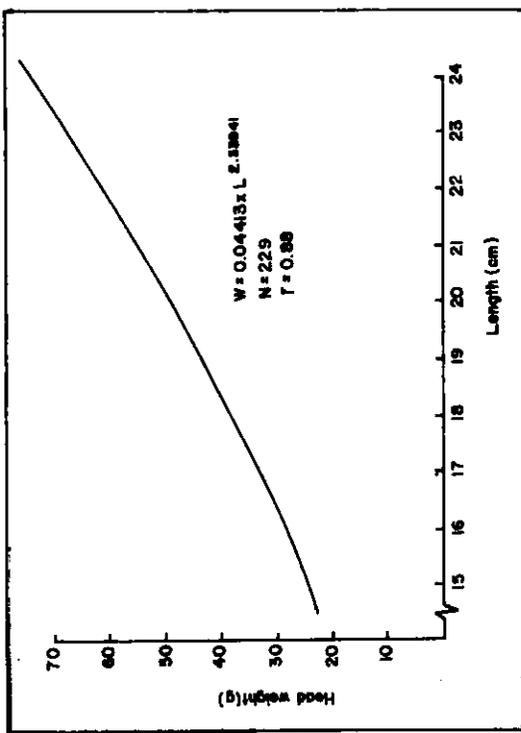


Fig. 1. Length - Weight relationships for the short-finned squid

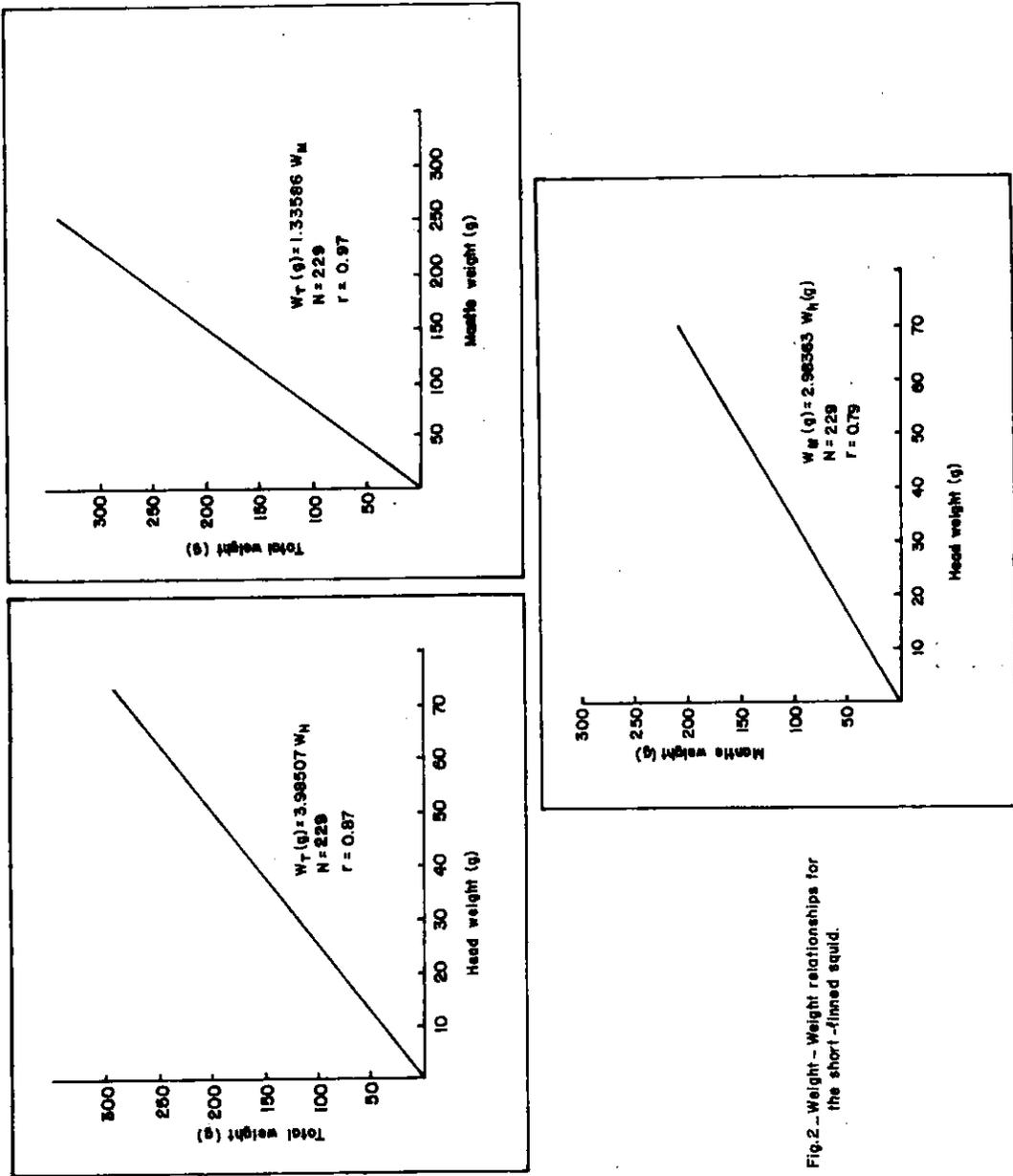


Fig. 2. - Weight - Weight relationships for the short-finned squid.

