

# GROWTH OF THE SPINY LOBSTER *PANULIRUS ARGUS* (LATR.): QUANTITATIVE ASPECT

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The purpose of this work is to correlate the total length (L) with the age (t) of the spiny lobster *Panulirus argus* (Latr.) landed at Recife (Pernambuco — Brazil) and For-

taleza (Ceará — Brazil), during the years 1962 and 1963.

Description of the fishery is found in Paiva (1958, 1961).

## METHODS

Samples collected from the catches were grouped by semesters. About 13 000 spiny lobsters were measured (grouped to the nearest 0.5 cm) in Fortaleza. In Recife the cephalothorax (C) of about 9 000 spiny lobsters were measured (grouped to the nearest 3 mm) and transformed to total length by means of the correlations:

$$\text{males } C = 0.423L - 9.320$$

$$\text{females } C = 0.366L - 1.255 \text{ (mm)}$$

As total length we considered the distance from the anterior margin of the cut between the rostral spines to the end of telson, taken in the symmetric plan over the dorsal part of the body, when the individual is completely spread over a flat surface.

The length frequencies were decomposed on Petersen's principle (Parrish, 1956) giving the modes presented in the tables I and II. Plotting these values (figure 1), it is seen that the modes form annually resulting from spawnings.

We used the Bertalanffy expression  $L_t = L_\infty [1 - e^{-K(t-t_0)}]$  adjusted by Ford-Walford's method (Beverton & Holt, 1957), as a specification of the mentioned correlation.

The t-test applied to  $L_{t+1} = f(L_t)$  correlation for both places, indicates that there is not significant difference ( $P > 0.05$  for regression coefficient and  $P > 0.01$  for independent term), permitting combination of the data.

TABLE I — MODES (cm) — RECIFE

SEMESTERS							
1st		2nd		3rd		4th	
males	females	males	females	males	females	males	females
17.8	22.7	17.1 *	18.4 *	19.2	19.2	17.8 *	18.4 *
23.5	26.6	21.4	22.0	24.2	24.9	22.8	23.0
27.0	30.7	24.9	26.6	27.1	28.2	26.3	27.4
29.9		29.2	29.0	30.6	30.7	28.4	29.5
31.3		30.6		32.0		30.6	
32.7		31.5				33.4	
		32.7					

\* Influenced by selection and/or recruitment.

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TABLE II — MODES (cm) — FORTALEZA

SEMESTERS							
1st		2nd		3rd		4th	
males	females	males	females	males	females	males	females
19.0	21.0 *	22.0	21.5	22.5	21.5 *	21.0	22.0
22.5	23.5	25.0	26.0	26.0	24.5	24.0	25.0
27.5	27.5	29.0	29.0	29.5	27.5	28.0	
29.0	29.5		31.0	31.0	29.0	30.2	
31.0							

\* Influenced by selection and/or recruitment.

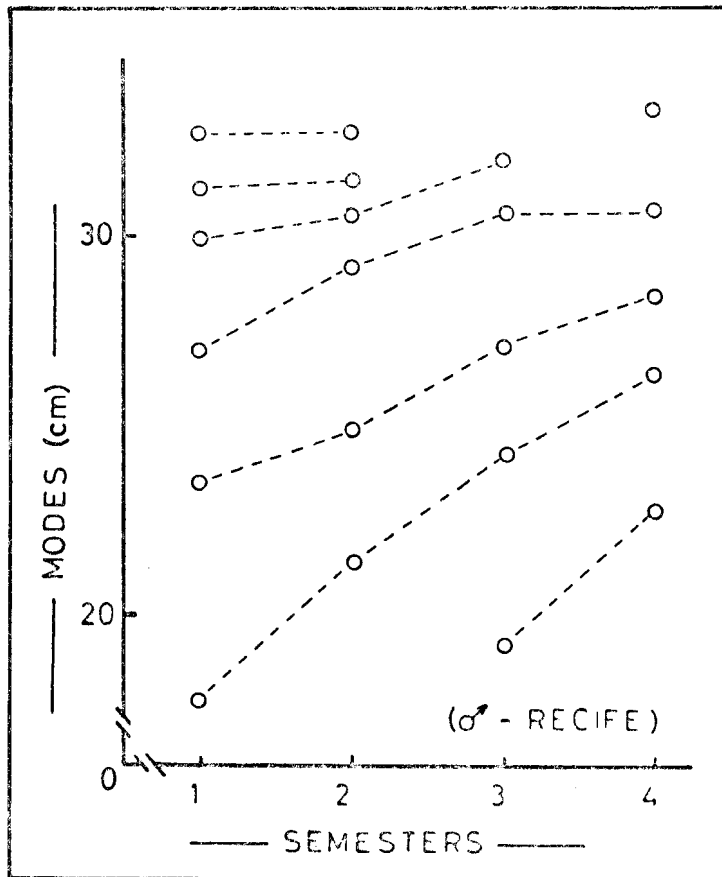


FIGURE 1

CONCLUSIONS

The quantitative aspect of growth of the spiny lobster *Panulirus argus* (Latr.), with-

out significant difference in Recife and Fortaleza, can be expressed by the following equations:

males  $L = 35.6 (1 - e^{-0.34t})$  for January (figure 2)  
 females  $L = 35.3 (1 - e^{-0.38t})$  for March (figure 3)

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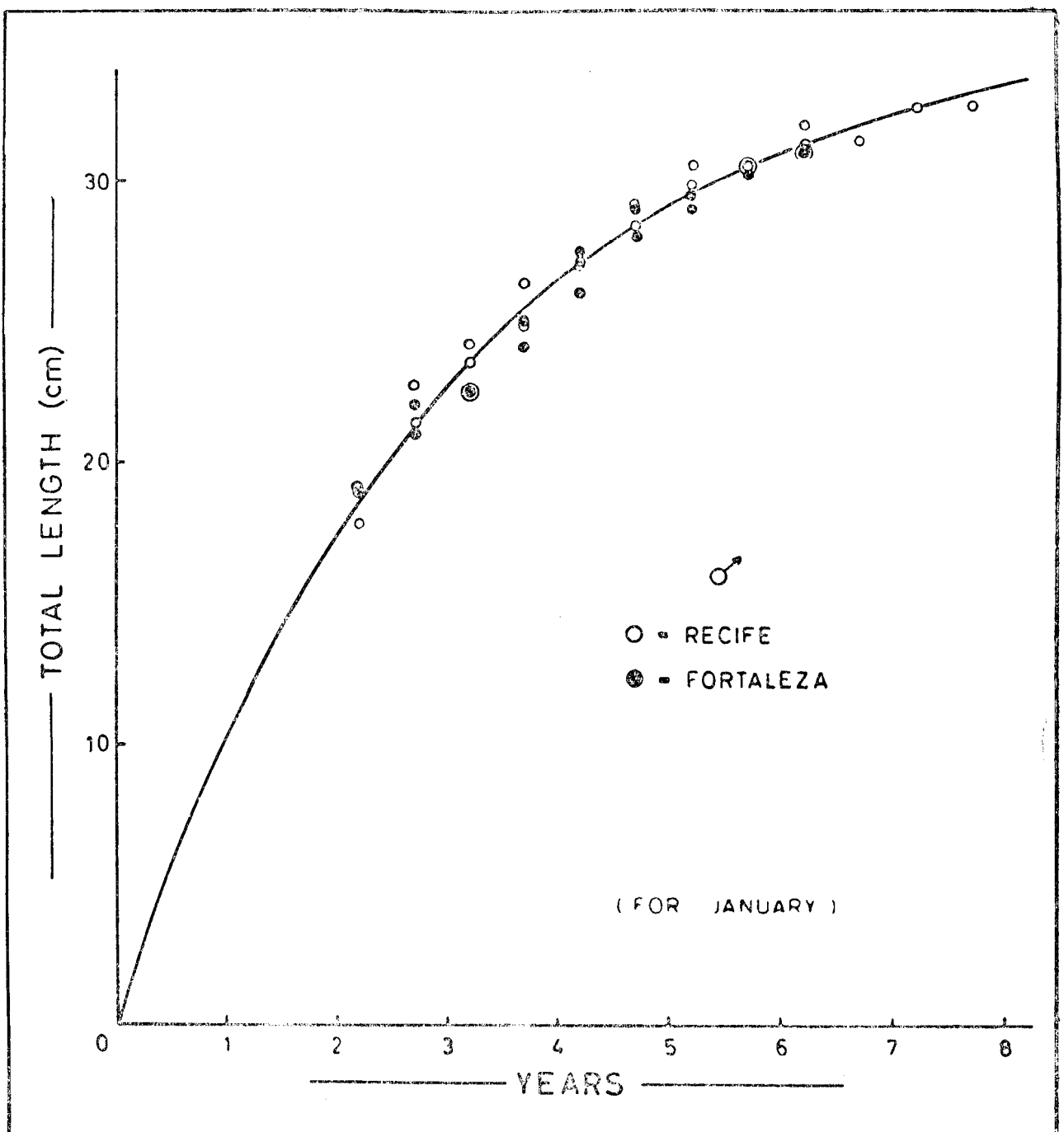


FIGURE 2

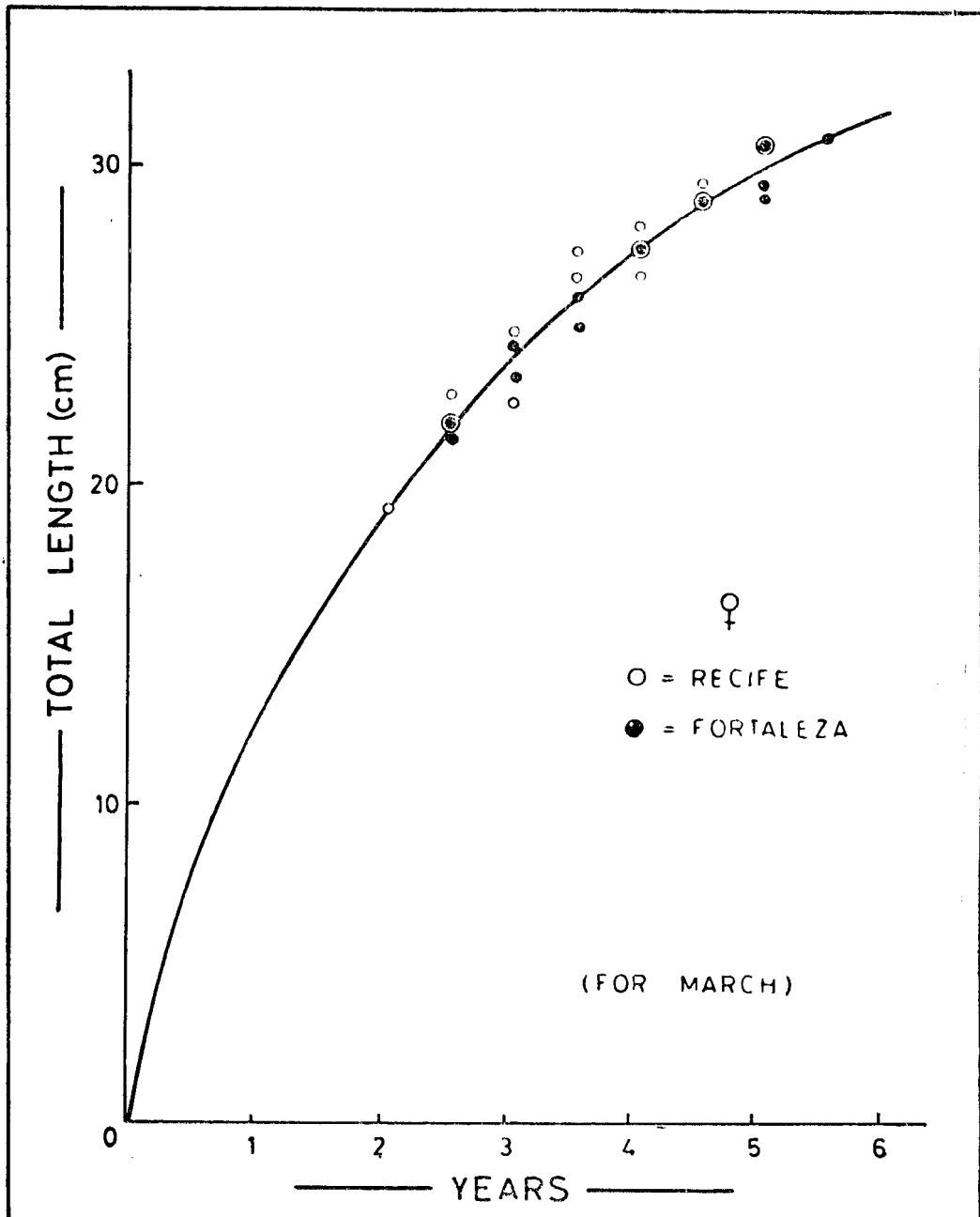


FIGURE 3