

THE TRANSFORMATION OF ENERGY BY

LUCIFER CHACEI (BORRADAILE)

BOWMAN (CRUSTACEA, DECAPODA)

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ABSTRACT

A laboratory study of the energy transformations by the pelagic decapod (crustacea) Lucifer chacei was made. Three combined stages: the zoea-protozoa stages, the combined early and late schizopod stages and the combined adult stages were studied. Respiration measurements were made with a micro-Winkler technique. Assimilation was determined with the radioisotope S^{35} . Dry weight, ash content, and calorific value were determined for each of the three combined stages. Number of calories/hour ingested, assimilated, and respired were determined for each of the combined stages and an energy flow diagram was constructed.

The larvae grew well on four different species of phytoplankton. The adults were fed phytoplankton and Artemia salina nauplii and are considered to be omnivorous. The data indicate that this change from herbivorous larvae to omnivorous adults may have to occur in the natural environment because the older stages cannot obtain enough energy for growth from phytoplankton alone.