First feeding of larval herring

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The transition period from endogenous to exogenous feeding by larval herring was investigated in the laboratory for four herring stocks in order to evaluate the chances of survival at the time of first feeding. Observations on larval activity, feeding and growth were related to amount of yolk, visual experience with potential prey organisms prior to first feeding and prey density. Herring larvae did not initiate exogenous feeding until around the time of yolk resorption. The timing of first feeding was not influenced by prior exposure to potential prey organisms during the yolk sac stage. In the light of these observations, the ecological significance of the yolk sac stage is discussed. Initiation of exogenous feeding was delayed by 1-4 days at a low (7.5 nauplii .cntdot. l-1) compared to a high (120 nauplii .cntdot. l-1) prey density, but even at prey densities corresponding to the lower end of the range experienced by larvae in the sea, larvae were able to initiate exogenous feeding. There is thus no need to postulate extraordinarily high densities of food in larval nursery areas in order for the larvae to initiate exogenous feeding and the present observations do not support the comprehension that the time of yolk resorption is a particularly 'critical period' for larval herring survival.

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