

海産枝角類Penilia avirostris Dana の飼育

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Short Paper

Cultivation of Marine Cladocera, *Penilia avirostris* DANA*¹.

To contribute the development of technical problems in the mass culture of zooplankton as food for early stage of fish larvae in marine fish farming, attempts of cultivation of cladocera *Penilia avirostris* have been made, and attained high concentrations. In present paper, the successful culture method in experimental scale is described.

The resting eggs of *Penilia* were collected from the seabottom muds, near Tsu, in the Ise Bay, isolated by Onbe's method¹⁾, and hatched in 1,000 lx (L:D=12:12) at 18°C, 25.3‰ S. Sea water obtained from the same area was heated to 70°C, filtered through absorbent cotton, then, diluted to 25.3‰ S (14.0‰ Cl) with distilled water. Cultural experiments were conducted in four glass beakers containing 50 ml of sea water and with each 20 young animals. Culture vessels were kept under a weak illumination (about 1,000 lx) of 12 h/day at 20°C ($\pm 1^\circ$). Food algal medium, chrysoomonad *Isochrysis galbana* PARKE, was added in proportion to the number of animals, roughly 15×10^4 cells/animal/day, in every morning. Bacterial contamination of the experimental vessels was controlled by transferring the animal to fresh medium, in clean beaker, at regular intervals of 1 week or less. Counting of the animals was made in every transfer with a large glass pipette. As population increased to 2 individuals/ml, larger vessels were used. Under these conditions, dense culture of *Penilia*, 4,000 to 5,000 individuals in 2 liters, was maintained.

The growth of population of *Penilia* is shown in Fig. 1. The population did not show marked fluctuation until 3 weeks after incubation, but they began to increase rapidly after 30 to 35 days, and reached about 100 times of initial population after 44 to 63 days. The population in the culture was consisted of the females, and appearance of the male was not observed. The generation time of *Penilia* in the culture has not been clear yet. Increase of bacterial contamination gave more or less negative effect for the growth of

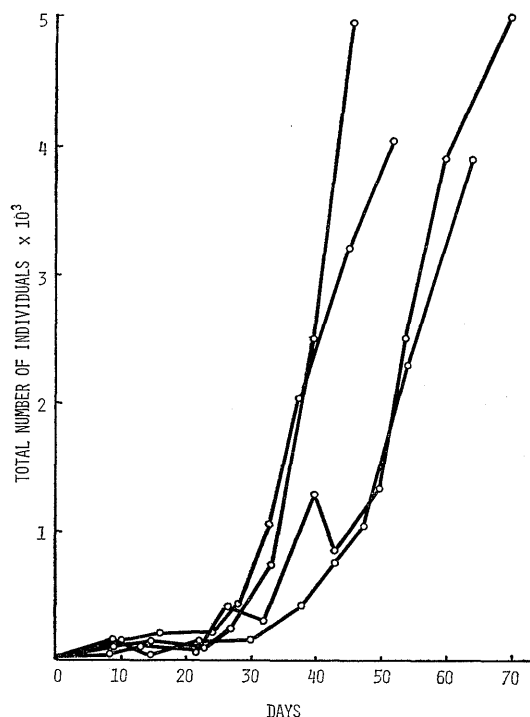


Fig. 1. Growth of population of *Penilia avirostris* fed on *Isochrysis galbana* at 20°C and 25.3‰ S. Each curve shows the growth in four experiments simultaneously started with 20 young animals respectively.

Penilia, even though bacteria might serve partly as foods. Management of water quality including the control of bacterial contamination remains to be solved.

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