ABSTRACT

A study was completed in Kingston Harbour on Penilia avirostris Dana, between April 1974 and May 1975, at three environmentally different stations. It appears from the data that the population underwent characteristic large fluctuations and rapid changes, which included a period of four months when no Penilia were to be found. It was noted that these fluctuations in the population were not directly related to physical environmental changes, such as temperature, salinity or water clarity. However, relationships were noted between Penilia and Temora at Station 1 and 4, with Penilia blooming four and three weeks respectively after Temora. An association was also noted between Penilia and Eurterpina, with Penilia attaining peaks two weeks after Eurterpina at Station 10. Food is most likely the common factor in these three relationships, and in each case, Penilia blooms after the copepods. The three populations of Penilia were found to be independent of each other; for instance the population of Penilia at Station 10 did not contribute to the population of Penilia at Station 1.

Feeding experiments on Penilia were performed to test the behaviour of Penilia in different concentrations of food and Penilia, and to see whether the ingestion of beads varied with the body length of Penilia. The ingestion of beads by Penilia increases with a rise in the concentration of either beads or Penilia; which may be caused by the presence of more beads or Penilia stimulating the feeding mechanism. The average number of beads ingested was noted to rise as the body length of Penilia increased, up to 800 μ in length; whereupon

the average number of beads ingested decreased. The fact that age is associated with growth may explain the decline in beads ingested, as with age comes a slowing of reflexes and filtering capacity.