Some Preliminary Observations on the Autecology of the Ciliate Conchophthirus mytili, an Ectocommensal of the Foot of Mytilus edulis

C. Dale Beers University of North Carolina

It is known that the rate of water propulsion through the mantle cavity of Mytilus corresponds to the tidal levels where the mussel occurs. Since the incurrent stream supplies the food of both Mytilus and Conchophthirus, the question arises whether any of the activities of the ciliate are correlated with the cycles of water propulsion. This question was studied, using division rate as the criterion of activity.

In July and August, 1958, 150 mussels were collected on the Laboratory shore between the tide lines at low water (mussels thus exposed and not feeding when collected) and examined immediately for Conchophthirus; 120 mussels were taken from the same sites at high water (thus well submerged and presumably feeding when collected) and likewise examined. The mussels taken at low water had 3558 ciliates, of which 187 or 5.3 per cent were in division; those taken at high water had 2870 ciliates, of which 138 or 4.8 per cent were dividing. Examination of these percentages shows that division was not correlated with rate of water propulsion.

Although approximately 5 per cent of the ciliates were regularly found in division, the average number per mussel was only 22. This low figure suggests that ciliate losses in the excurrent stream are numerous, and that Conchophthirus, in order to infect new hosts where tidal extremes are great, must have considerable tolerance for sea water. Reports in the literature indicate, on the contrary, that it can live only an hour or two in sea water away from its host. A reinvestigation of this point showed conclusively that Conchophthirus when removed from its host can live in sea water at least 72 hours, provided the normal temperature of the water (about 14° C. in Frenchman Bay) is not exceeded. Its ultimate death under these conditions results from starvation, though higher temperatures are lethal.

The Effect of Tetracycline on Skeletal Development of E. parma

G. Bevelander, L. Goldberg, and H. Nakahara New York University College of Dentistry

The addition of tetracycline to the sea water in which fertilized eggs of E. parma were reared produced a marked effect upon subsequent development. At 75 mg/100cc, development is completely arrested; at 50