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The Influence of Paramecium Tetraurelia on Bacteriophages in Aquatic Ecosystems: Ingestion Without Inactivation

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THE INFLUENCE OF *PARAMECIUM TETRAURELIA*
ON BACTERIOPHAGES IN AQUATIC ECOSYSTEMS:
INGESTION WITHOUT INACTIVATION

A Thesis
Submitted to the School of Graduate Studies and Research
in Partial Fulfillment of the
Requirements for the Degree
Master of Science

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May 2012

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Title: The Influence of *Paramecium tetraurelia* on Bacteriophages in Aquatic Ecosystems: Ingestion without Inactivation

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It is not known how and to what extent protozoa and viruses impact each other's population though they both rely on bacterial populations. In some species of protozoa it has been shown that there is ingestion and inactivation of bacteriophages, having a regulatory effect on the phages for the benefit of the protozoa. This study investigated the interaction of *Paramecium tetraurelia* and the bacteriophages, T4, T5, and λ , in order to determine if there was ingestion and inactivation. Paramecia and phages were incubated together and aliquots were taken every hour and evaluated for phage concentration; additionally, lysis experiments were performed to determine if there was viable phage recovery. It was shown that the concentration of viruses remains approximately the same over time and that viable phages are recovered from lysed paramecia. Therefore, there is evidence suggesting paramecia ingest but, do not inactivate, the complex, double-stranded DNA phages used in this investigation.