

Studies on the Kinetics of Uptake of Nitrate
and Ammonium by Phytoplankton

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Several experiments to evaluate rates of nitrate and ammonium uptake by phytoplankton were conducted using methodology described in the 1970 report. Because of breakdowns of the mass spectrometer most experiments have not been analyzed. However, preliminary data from Swan Lake indicate that the hypothesized relation between nutrient concentration and K_t may hold; as dissolved nitrate concentrations decreased from 24.3 $\mu\text{M/liter}$ to 2.5 $\mu\text{M/Liter}$, K_t decreased from 1.17 $\mu\text{M/liter}$ to 0.0004 $\mu\text{M/liter}$. Phytoplankton counts are nearing completion, and in conjunction with autoradiographs should aid in interpreting the data on a species or generic level as well as on the community level.

Work was begun on biochemical predator defense in algae. Algae were collected and aqueous extracts made. Zooplankters showed marked behavioral changes in the presence of the extract. Experiments will shortly be under way to evaluate whether the zooplankters are attracted to, or repelled by the extracts.

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