

AN ECOLOGICAL STUDY ON OLIGOTROPHIC BACTERIA  
IN THE ANTARCTIC OCEAN (ABSTRACT)

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We made an attempt to make clear some ecological significance of heterotrophic bacteria in the Antarctic Ocean. The distribution and activity of oligotrophic bacteria, dominant population in oligotrophic waters, were determined, using five kinds of  $^{14}\text{C}$ -compounds (glutamate, glucose, acetate, glycolate and glycine).

The number of oligotrophs in surface waters ranged from  $2.0 \times 10^1$  to  $2.4 \times 10^4$  cells/ml, which were dominantly occupied by obligate oligotrophs. They preferred glutamate, glycine then glucose, to glycolate and acetate. As to *in situ* uptake-rate of the five compounds, glutamate and glycine gave a higher rate, whereas glycolate and acetate were extremely low. In almost all cases, the occurrence of the attached bacteria was less than 1% of the viable cells.

Further ecological and physiological studies of the oligotrophic bacteria are in progress.

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