

Notice on Plankton Seminar

#04020

9:00 11:00, 5 Nov. (Fri.), 2004 at Room #W-103

Metabolic characteristics of meso- and bathypelagic copepods in the Oyashio region, western North Pacific Ocean

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Copepods living in the 500-1000, 1000-2000, and 2000-3000m depth strata in the Oyashio region were retrieved by vertical hauls with closing nets, and their oxygen consumption rates were determined on board ship at near *in situ* oxygen concentrations ($2-3.5 \text{ mlO}_2 \text{ l}^{-1}$) and temperatures ($1.5-3^\circ\text{C}$) by using a sealed-chamber method. Oxygen consumption rates thus obtained on a total of 64 copepod species were standardized on body nitrogen basis to examine the effect of body size (nitrogen), temperature, depth of occurrence, and ambient oxygen concentration. Stepwise-multiple regression analyses on these data, combined with those of epipelagic copepods inhabiting similar thermal regimes (Arctic and Antarctic), revealed that in addition to body size and temperature the depth of occurrence is a factor affecting the oxygen consumption rates of deep-sea copepods. Typically, the oxygen consumption rates of bathypelagic copepods were 1/3-1/4 of the rates of epipelagic ones. Possible artifacts during the process of recovery of copepods from depth are unlikely as simultaneous determinations of ETS-activities of these copepods exhibited the same effect of depths they originated (F. Sano et al., unpublished data). Thus, our results do not support standing view that the metabolic activity of pelagic copepods is not affected by the depth of their occurrence in the ocean.