

Investigation of zooplankton motional activity
and intensity of respiration from point of ecology

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Abstract

Tenfold enlargement of respirometer volume promotes increase of total motional activity and intensity of respiration (2-5 times) in females of Calanus helgolandicus and males of Anomalocera peter soni and Pontella mediterranea.

To ascertain the degree of possible influence of laboratory conditions of the planktonic animals the oxygen consumption intensity, velocity and character of their motion have been determined in the respirometers 0.1 and 1.0 l. Temperature was close to the temperature of their habitat. C. helgolandicus, A. pater soni and P. mediterranea were used as objects. The character of motional activity was elucidated by observing a copepod in the aquarium, the velocity of movement-by filming (Pavlova, Tsareva, 1975, 1976). Enlargement of aquarium volume resulted in the increase of total motional activity of investigated species. Oxygen consumption intensity was measured in the respirometers of 3 volumes : 77, 280 and 1400 ml using method after Vinkler (Pavlova, 1977). Enlargement of respirometer volume from 77 to 1400 ml was followed by increase of respiratory intensity from 2 to 5.5 times. Obtained changes in motional activity and respiratory intensity are typical of large usually active species. Smaller planktonic species do not show such dependence (Razouls, 1972). Evidently, in order to experiments must be carried out in the optimum volumes of water with account of etologo-ecological peculiarities of given animal species.

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