

ВЕРТИКАЛЬНОЕ РАСПРЕДЕЛЕНИЕ БАКТЕРИЙ

VERTICAL DISTRIBUTION OF BACTERIA IN FOREST LAKES OF KARELIA

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The total abundance of bacteria, the numbers of saprophytic, oligotrophic and sulfate-reducing microorganisms, the shapes of bacterial cells, the primary and bacterial production, organic matter destruction, and the rate of sulfate reduction were studied in small Karelian lakes during the stagnation period. It is shown that the uneven vertical distribution of light, temperature, oxygen and hydrogen sulfide creates ecological niches for the development of many various groups of microorganisms. In most lakes, the minimum abundance of microorganisms was found in their surface water layer while its maximum was in the near-bottom ones. The trophic status of a waterbody has a great influence on the formation of microbial communities and their functioning. Autochthonic organic matter in closed forest lakes studied (the local term “lamba”) was formed due to phytoplankton photosynthesis but the bacterial production exceeded the primary one in the hypolimnion of eutrophic lakes. The content of hydrogen sulfide, the abundance of sulfate-reducing bacteria, and the rate of sulfate reduction were maximal in the bottom sediments of eutrophic lambas.

Key words: Karelian lakes, abundance of microorganisms, production, destruction, sulphate reduction.

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