Individual-Based Approach in Ecology

Assumptions, Achievements, Prospects

Workshop

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Heterogeneity in freshwater bryozoa *Plumatella fungosa* (Phylactolaemata)

Tatiana V. Mikhaevich
Belarus

Great ecological variability characteristic of Phylactolema is expressed in different quality of the growth and reproduction of zooids and the whole colony. Freshwater Bryozoa are little known in this respect.

A complex of zooids consisting of 7-8 modules bears the initial different quality of the colony and is its multimodule. The multimodule forms heteromorphous bifurcations composing the colony. Morphological heterogeneity of zooids in the multimodule determines the number of buds in the clone, the duration of the vegetative ripening period and the budding period in a zooid. At 27.5°C, the strategy of multiplication of the multimodule is directed to redistribution of functions: some zooids increase in length and are divided a little, cumulating the colonial growth material for others that are leaders in the number of buds. Morphological indices are less heterogenous as compared with physiological indices. The duration of ripening of zooids and budding distinctly depends on temperature. These processes were inversely proportional to the length of zooids. The longer their length, the longer the length at which the first bud appeared. An increase in the length of a zooid was characterized by a decrease in the rate of physiological processes at 22, 27 and 32.5°C.

The strategy of multiplication of Phylactolema is determined by morphophysiological heterogeneity of the colonial pattern of the multimodule. Studies of peculiarities of Bryozoa cloning and redistribution of the colonial material is necessery to reveal the reproductive and somatic relation in astogenesis of the colonies and to find the forms of ecological variability of Phylactolema.