

**THE PHYTOPSAMMON IN INTERSTITIAL OF WATERSIDE AREA  
AS ECOLOGICAL GROUP OF MICROSCOPIC ALGAE OF CONTACT SEA AREA**

**Kovtun<sup>1</sup> O. A., N. E. Gusliakov<sup>1</sup> and A. A. Tarasenko<sup>1</sup>**

<sup>1</sup>Odessa National I. I. Mechnikov University, the department of hydrobiology and general ecology, Dvorianskaia, 2, Odessa, 65026, Ukraine

Research on fringe communities, which include an ecological complex of sea-shore interface area, showed that distinct "underground littoral" – the interstitial – is one of the most important components of the coastal part of the sea, situated in the region of interactions between physico-geographical components and coastal and littoral processes. Increasing anthropogenic pressure on the sea has affected the coastal interface area and the processes taking place there.

Psammic algae that live in the interstitial water between sand grains, together with the meiofauna, form a distinct self-contained ecological group; it is suggested that we name it the **mesophytopsammon**, according to basic principles of classification. At the same time, the aggregate of microscopic algae living on the sand grains will be termed the **epiphytopsammon**, the **intrapssammon** comprising the algae moving freely on the surface or between sand grains. Altogether, the psammon population includes both photoautotrophic and heterotrophic organisms. The photoautotrophs contain considerable quantities of the Bacillariophyta, Protococrophyceae, and Cyanophyta.

When studying the algae, we can distinguish between three differing areas, depending on the structure and the width of sandy sediment-covered areas, the type of reservoir and shore line: the **hydrosammon**, i.e., the permanently submerged sand area, the **hygropsammon** which is the area of moist sand, and the **epipsammon**, i.e., the area with a dry layer of sand on the surface. Depending on the width of the **hygropsammon** area and of the type of reservoir, the **splash** and **cut** water subareas are often identified, their width varying strongly.

The research of the sandy coasts of the Black Sea and limans reveals a high species diversity of microscopic algae in undisturbed biotopes. The algae, when occurring at high densities, cause "blooming" of the sand. The whole phytocomponent biomass in such sands attains 1 mg/g of sand, the algal abundance exceeding  $950 \times 10^3$  cells/g.

Thus, the ecological group of microscopic algae identified, i.e., the mesophytopsammon, proves to play an important role in the fringe sea communities and at the same time it is the first to be exposed to negative effects of external factors both from the land and from the sea. This is why it can serve as an indicator in the assessment of sanitary state of the reservoir to test for effects of different parameters affecting it.