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STUDIES OF ABIOTIC CHARACTERISTICS' INFLUENCE ON PHYTOPLANKTON SPECIES DIVERSITY IN THE COASTAL WATERS OF THE ZMIINYI ISLAND (2010)

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Timeliness of phytoplankton modern studies lies in integrated quality assessment of sea waters in the North-Western Black Sea. Peculiarity of the Island Zmiinyi's coastal waters is periodic influence of sweetened Danubian waters' hydrofront, which creates unique conditions for species diversity and development of certain /unique species and communities of phytoplankton.

Aim of the work was to study changes happening in the species composition of phytoplankton depending on changes of hydrophysical and hydrochemical parameters of sea water: pH value, conductivity and nutrients concentration in the Zmiinyi Island coastal waters. Hydrological and hydrochemical observations and water sampling for determination of nutrients and phytoplankton were carried out on the research station «Zmiinyi Island» of Odessa National I.I.Mechnikov University in the framework of planned budgetary projects funded by the Ministry of education and science of Ukraine. The studies were based on the data from environmental monitoring carried out in 2010 on the permanent measuring station ("Pier", depth 8 m).

From June till December more than 100 microalgae species were registered belonging to 10 taxonomic phyla: *Bacillariophyta, Dinoflagellata, Chlorophyta, Cyanophyta (Cyanobacteria), Chrysophyta, Cryptophyta, Haptophycophyta, Heterokontophyta, Euglenozoa, Ebriophyceae.* Total number of phytoplankton species found in water samples collected from surface horizon varied from 9 to 25.

Seasonal changes in concentrations of nutrients dissolved in water (phosphate, nitrite and nitrate) caused appropriate seasonal (successive) change of species in phytoplankton community.

Visible decrease in total numbed of dominant phytoplankton taxa (*Bacillariophyta*, *Dinoflagellata* и *Cyanobacteria*) was observed in the periods of pH value decrease (down to 7,84 pH units). At that it was pointed out that species of *Bacillariophyta* and *Cyanobacteria* during that period stayed the same, and for *Dinoflagellata* increase of species number was registered from 6-7 to 12. For algae of other phyla no such dependence on pH value was established.

The highest correlation connections were pointed out between number, species and salinity and temperature of coastal waters, at that maxima of species quantity and biomass were observed in the periods of hydrofronts passing. At this time both marine and freshwater species were registered in the phytoplankton samples.

To conclude, we would propose to expand the program of phytoplankton monitoring in the Zmiinyi Island coastal waters, paying special attention to especially toxic and potentially toxic micro-algae.