

**ON THE MATTER OF DINOPHYTA CHANGES IN THE NORTH-
WESTERN BLACK SEA FOR THE LAST 20 YEARS**

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Dinophyta algae of the Black Sea plankton are the important component of marine ecosystem, they are food for many marine animals and could cause ‘algal blooms’, the so-called ‘red tides’. Most of the species are autotrophs, however we know about heterotrophic nutrition of some of them by osmosis or phagocytosis. It is known that the following factors influence the size of cells and, respectively – total biomass of dinophyta algae: seasonal changes of water temperature and content of dissolved nutrients, as well as age of the cells and the level of provision with food (for phagocytes).

Aim of our work has been study of size of dinophyta algae cells in the period from 1992 to 2012. Our studies cover two periods – the end of the XX Century (eutrophication of marine waters) and the past decade, which is characterized by practical absence of eutrophication phenomena on sea shelf.

Methodology of studies and the source planktonic materials collected by Odessa National I.I. Mechnikov University on the north-western Black Sea shelf (1992–2000) and in the Zmiinyi Island coastal waters (2003–2012) are described.

Changes of cell sizes of 97 mass species belonging to 15 genera семействам: *Gymnodiniaceae*, *Polykrikaceae*, *Cladopyxidaceae*, *Gonyaulacaceae*, *Ceratiaceae*, *Goniodomataceae*, *Heterocaspaeae*, *Glenodiniaceae*, *Peridiniaceae*, *Lessardiaceae*, *Oxytoxaceae*, *Dinophysaceae*, *Prorocentraceae*, *Protopteridiniaceae*, *Warnowiaceae* have been analyzed. Diagrams of changes of cell sizes have been presented and discussed; elongation and roundness factors for each species have been calculated. It is shown that during eutrophication periods for species of genus *Ceratiaceae* indices of elongation of cells increase, while after 2003–2005 they decrease. Species belonging to genera *Prorocentraceae*, *Glenodiniaceae*, *Gymnodiniaceae* and others during eutrophication were more round, while in the current period the cells became flatter.

The current state of dinophyta compared with the data of the 90th is characterized by development of the cells having more ‘common’ form and size specified in botanical literature for the seas of the Atlantic Ocean.

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