

**IN MEMORIAM: ZOSIM FINENKO**  
**(17.11.1938 – 15.11.2021)**



On 15 November, 2021, after a serious and prolonged illness, Zosim Finenko passed away, a well-known hydrobiologist, D. Sc., Professor, laureate of the State Prize of Ukraine, and chief researcher at A. O. Kovalevsky Institute of Biology of the Southern Seas.

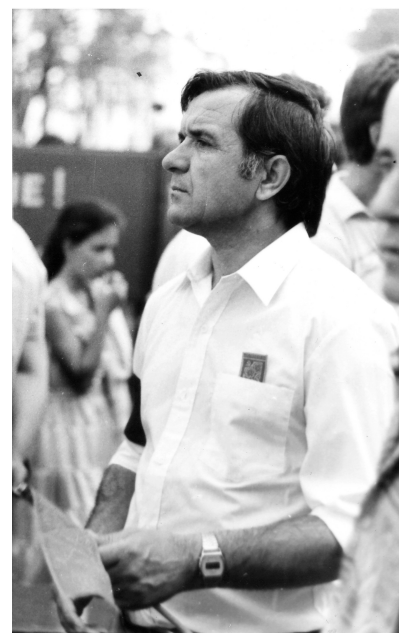
Z. Finenko was born in Berdyansk, Zaporizhzhya region, on 17 November, 1938. In 1961, he successfully graduated from the Belarusian State University specializing in biology and zoology; later, he entered PhD graduate school there and studied under the guidance of G. Vinberg, the classic of Russian hydrobiology. After graduating from the university (1961), Zosim Finenko began his career at IBSS. He became one of the first Russian hydrobiologists, who applied the radiocarbon method for measuring primary production in the Black Sea. During these years, he participated in many expeditions to the Black Sea and Sea of Azov. Together with L. Sushchenya, under the EQUALANT international program, he took part in the research cruise of the RV “Mikhail Lomonosov” to the Tropical Atlantic. Based on the results of those studies, he defended his PhD thesis in hydrobiology “Primary production of the Black Sea, Sea of Azov, and the Tropical Atlantic” (1966). The subsequent years were very productive. Specifically, participation in expeditions of the Institute of Oceanology to the Pacific Ocean broadened his horizons and brought new ideas and impressions. Moreover, he met interesting people, and many of them remained his friends forever. During this period, in addition to field research, he was involved in experimental work. Its material formed the basis for his D. Sc. dissertation in hydrobiology “Ecological and physiological foundations of primary production at the sea” (1977). In 1978, he was awarded the academic title of senior researcher; in 2000, the title of professor.

In 1980, on the initiative of Z. Finenko, algae ecological physiology department was created at IBSS of the Academy of Sciences of the Ukrainian SSR. Until 2020, he headed this department. In 1980–1988, being deputy director for scientific work, he contributed much in development of IBSS activity programs and in planning numerous scientific expeditions to various areas of the World Ocean. With his direct leadership and participation, several research cruises were carried out to the Black and Mediterranean seas, as well as to the Atlantic, Pacific, and Indian oceans. Many of our colleagues shared with him all the joys and difficulties of sea expeditions, in which he was always a key member

of the team – knowledgeable, aimed at discovering something new, interested in scientific results of other employees, and a cheerful companion with a subtle sense of humor. In different years, Zosim Finenko worked at leading research institutes in France, Italy, and the UK on EU and NASA grants.

For many years, he was a member of the IBSS scientific council, a member of the specialized council for the defense of PhD thesis and D. Sc. dissertations in hydrobiology, and a member of the editorial boards of *Marine Ecological Journal* and *Marine Biological Journal*. In recent years, he headed the subsection of the Presidium of the Russian Academy of Sciences project “Combined effect of environmental factors on the phytoplankton community development”. In 2016–2018, he headed the Russian Foundation for Basic Research project “Alternative approach to assessing biomass and growth rate of phytoplankton in the Black Sea using satellite data”.

Z. Finenko was a well-known specialist in the field of microalgae physiology, production processes in seas and oceans, primary production modeling, and theory of the functioning of phytoplankton community and aquatic ecosystems. He carried out fundamental research on algae physiology and phytoplankton productivity, as well as on modeling production processes and photosynthesis production with satellite data applying. He theoretically substantiated and experimentally confirmed the quantitative regularities of the relationship between biosynthesis rate and organic matter destruction in algae and their size and weight. Due to in-depth analysis of these data, theoretical concepts were significantly developed concerning both the physiological mechanisms of algae adaptation to environmental conditions and relationship between microalgae growth rate and intensity of photosynthesis and respiration, as well as intracellular content of organic carbon and pigments. He developed a semi-analytical model describing the combined effect of light, temperature, and nutrients on variability in growth rate and pigment content in algae of various taxonomic groups.



General quantitative regularities of chlorophyll *a* vertical distribution in the southern seas were substantiated and confirmed on extensive material. For the first time, convincing evidence was presented that the rate of nutrient flow from deeper layers to the surface and adaptation of phytoplankton community to light are the main factors regulating the shape of chlorophyll vertical profile and its relative content in phytoplankton. The results of Zosim Finenko’s fundamental research served as the basis for the development and substantiation of modern methods for determining primary production using satellite measurements of chlorophyll *a* concentration and solar radiation. This allowed to evaluate production in real time, on scales from several tens to thousand kilometers. On this basis, new data were obtained on global phytoplankton productivity in the vast water areas of the Black Sea and Atlantic Ocean, its dynamics, and relation with climatic changes. Those could not be obtained earlier, applying other methods.

Until the last days of his life, Z. Finenko worked with enthusiasm on the problem of the spatio-temporal variability of phytoplankton biomass and primary production in the Black Sea. He endeavored to find out the main factors and processes determining the trends in the variability of primary production indicators at the current stage of the Black Sea ecosystem development. His extensive scientific heritage is an invaluable contribution to the Russian science. His activity is reflected in more than 150 articles and 5 collective monographs.



Zosim Finenko was a talented teacher and a man of encyclopedic knowledge. He shared his skills and knowledge with numerous students and created his own scientific school. Among his students, there is 1 D. Sc. and 13 PhDs.

Z. Finenko left a noticeable mark in the history of Russian hydrobiology and in the hearts of everyone he worked with and was friends with. The bright memory of him will always live in our hearts.

*Students, colleagues, and friends*

**ПАМЯТИ ЗОСИМА ЗОСИМОВИЧА ФИНЕНКО  
(17.11.1938 – 15.11.2021)**

15 ноября 2021 г. ушёл из жизни Зосим Зосимович Финенко — выдающийся учёный-гидробиолог, доктор биологических наук, профессор, главный научный сотрудник ФИЦ ИнБЮМ. З. З. Финенко — автор более чем 150 научных статей и 5 коллективных монографий.