

NELLI MYKOLAIVNA ZHDANOVA

(to the 90th anniversary)



On August 27, 2022, we marked the 90th anniversary of the birth of the famous mycologist, a well-known specialist in the field of extreme ecology of microscopic fungi, laureate of the Zabolotnyi premium (1991), doctor of biological sciences, professor Nelli Mykolaivna Zhdanova.

Nelli Mykolaivna's childhood and youth were spent in the troubling 1930s and 1940s. She was raised by her mother, Tamara Fedorivna Hlushchenko. Her father had been repressed before she was born. They met for the first time in 1948. Upon graduating from school, Nelli Mykolaivna entered the Shevchenko Kyiv State to the department of lower plants (1950—1955). While studying in her last year of the university, she

began her scientific way under the guidance of the outstanding Ukrainian mycologist Mykola Makarovych Pidoplichko at the department of experimental mycology of the Zabolotnyi Institute of Microbiology of the Academy of Sciences of the Ukrainian SSR (now the Department of Physiology and Systematics of Micromycetes of the Zabolotny Institute of Microbiology and Virology of the National Academy of Sciences of Ukraine), where she completed her diploma thesis related to the study of the diversity of soil fungi in the Kyiv region. Mykola Makarovych, whom Nelli Mykolaivna considered her Teacher, highly appreciated the professional potential of the young scientist.

While working at the department after graduating from university, N.M. Zhdanova prepared her candidate's thesis «Dark-colored hyphomycetes in the rhizosphere of corn in different climatic zones of the Ukrainian SSR», expanding the study of soil fungi to the entire territory of Ukraine, and successfully defended it in 1964.

Later on, N.M. Zhdanova devoted herself to studying the biodiversity of soil micromycetes in both Ukraine and other regions of the USSR, paying special attention to dark-pigmented fungi and the biological function of melanin in fungi, establishing some mechanisms of the broad non-specific activity and protective effect of this pigment. The results of the many-year research were included in the thesis «Study of the biological role of melanin pigment in fungi

of the Dematiaceae family in connection with their ecology», which was successfully defended in 1978 for the degree of Doctor of Biological Sciences.

After the disaster at the Chornobyl NPP, N.M. Zhdanova was at the forefront of a team of scientists who directly and actively participated in the study of the consequences of this terrible accident, in particular, she led an expedition to the exclusion zone to collect soil samples.

In 1988, N.M. Zhdanova became Head of the Department of Physiology and Systematics of Micromycetes of the National Academy of Sciences of Ukraine, where she had been working for over 30 years. For 20 years, her team studied the mycobiota of the soil and forest litter in the contaminated areas after the Chornobyl disaster and the premises of block 4 of the Chornobyl NPP. As a result, fungi-biodestructors of «hot» particles and reactor graphite were determined, species-bioindicators of three levels of radioactive contamination of soil and forest litter were identified, as well as the phenomenon of positive radiotropism and features of the formation of fungal complexes in the process of natural remediation of soils contaminated with radionuclides were established for the first time. The findings were presented in the section «Radionuclides and fungal communities» of the monograph «The Fungal Community: its organization and role in the ecosystem» (2005), which was written in close cooperation with K. Haselvandter and V.O. Zakharchenko, and in the section «Interactions of fungi and radionuclides in soil» of the monograph «Microbiology of extreme soils. Soil Biology» (2008) co-authored by D. Dayton and T.I. Tuhai. In 2013, the monograph «Mycobiota of Ukrainian Polissia: consequences of the Chornobyl disaster» was published (Zhdanova was its editor-in-chief) venerable and the author of most of the chapters), which summarized many-year research by the department's employees.

Today, the department goes on preserving and expanding the collection of microscopic

fungi, which includes 450 species of 125 genera, including extremophiles isolated from highly radioactive substrates, soils contaminated with heavy metals, and various technical materials. Under the leadership of N.M. Zhdanova began the study of species diversity and physiological and biochemical features of endophytic fungi of swamp plants of the Ukrainian Polissia, chemotaxis and phototropism in fungi, their radiostimulation and adaptation along with the continuation of studies of a wide range of fungal hydrolases and fungal resistance of various materials. As a result, the Fungal Resistance Testing Laboratory of Technical Products and Materials was created.

Nelli Mykolaivna always pays great attention to the education of the young scientific shift. She gave a course of experimental mycology, including issues of systematics, ecology, and physiology of fungi at the Department of Microbiology and Immunology of the Taras Shevchenko Kyiv State University. Under the guidance of Nelli Mykolaivna, 14 candidate theses were prepared and defended. N.M. Zhdanova was a scientific consultant for the doctoral thesis «Biodiversity and ecological and physiological features of endophytic micromycetes of plants of sphagnum bogs of the Polissia of Ukraine», specializing in «microbiology», which was defended in 2014 by I.M. Kurchenko.

N.M. Zhdanova officially retired in 2011, but since then, she has been actively participating in the scientific activities of the Institute. Until 2014, she was a member of the editorial board of the Microbiological Journal.

Nelli Mykolaivna Zhdanova has published about 400 scientific works, she is a co-author of 25 monographs, 3 methodological recommendations, and 14 patents. Her works are known both in Ukraine and abroad, as evidenced by a number of publications in international specialized journals and research support by international grants from INTAS and CRDF along with domestic grants.

N.M. Zhdanova is a member of the Society of Microbiologists of Ukraine, the Ukrainian Botanical Society, the Society of European Mycologists, and the International Radioecological Society. She was a member of specialized scientific councils for the defense of doctoral theses at the Zabolotny Institute of Microbiology and Virology NAS of Ukraine and the Kholodnyi Institute of Botany NAS of Ukraine named. Over 1992—1997. she was a member of the expert council of the Academy of Sciences of Ukraine on issues of general biology. N.M. Zhdanova was awarded the Certificate of Honor of the Verkhovna Rada of Ukraine (2008), since 2015 she has been receiving a State scholarship for outstanding scientists.

Professionalism, the constant search for and generation of new ideas, boundless devotion to

the chosen work, high efficiency, and sincere desire to transfer her experience to colleagues and young people — these are the features that characterize Nelli Mykolaivna as an outstanding scientist.

The scientific community, colleagues, and students sincerely congratulate Nelli Mykolaivna Zhdanova on her jubilee and wish her good health, creative energy, optimism, and many more happy years.

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