Vestnik zoologii, **49**(4): 379–382, 2015
DOI 10.1515/vzoo-2015-0043

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IN COMMEMORATION OF OTTO NIKOLAEVICH DAVYDOV

On June 12, 2013, Otto Nikolaevich Davydov, a leading researcher at the Schmalhausen Institute of Zoology National Academy of Sciences of Ukraine passed away. O. Davydov was born on July 14, 1938 in Hanlar town Azerbaijan SSR. In 1958 he entered the biological faculty of the Taras Shevchenko Kyiv State University, and graduated from it in 1963 as a zoologist. His first scientific work "Study on helminthofauna of insectivorous" was published in 1963 in "Proceedings of the IVth Conference of parasitologists of the USSR". In 1964 he took a post-graduate course at the Martsinovsky Institute of Medical Parasitology and Tropical Medicine Academy of Medical Sciences of the USSR in Moscow. In 1968, at a meeting of the Academic Council of the Skryabin All-Union Institute of Helminthology, he successfully uploaded his thesis "The study of the physiology of ascarid neuromuscular system and mechanism of piperazine action", prepared under the supervision of Professor A. I. Krotov.

After all O. Davydov came back to Ukraine and went to work at the department of sanitary hydrobiology at the Institute of Hydrobiology Ukrainian Academy of Sciences, where he worked as a junior researcher. In 1970 he went to the department of hydroparasitology at this Institute. In 1973, as a result of competition, O. Davydov was promoted to the post of senior researcher. Then, according to the decision of the Presidium of the Academy of Sciences of the UkrSSR, the department of hydroparasitology was moved from the Institute of Hydrobiology to the Institute of Zoology of the Academy of Sciences of the UkrSSR, to the newly formed sector of parasitology under the direction of A. P. Markevich. At the Institute of Zoology O. Davydov had been working for 40 years.

In 1970–1978, Otto Nikolaevich became the head of the Laboratory of environmental physiology of fish parasites as a part of the department of hydroparasitology, and studied physiology, biochemistry, immunology and histology of worms. Since 1973 the work of the staff was focused on studying of cestode *Bothriocephalus acheilognathi* — the pathogenic organism causing a dangerous disease leading to significant loss of young fish in ponds. Along with the study of physiological, biochemical and immunological characteristics of this cestode and affected carp, the effect of anthelmintics on the parasite and the host was also investigated. During this work, O. Davydov, together with A. M. Muzykovskiy and G. V. Vasilkov, the researches of the Skryabin All-Union Institute of Helminthology, developed an effective drug for bothriocephalosis control — activated fenasal, and received two certificates of authorship for these inventions (1977 and 1979).

In 1978, the laboratory was reorganized into the Department of Experimental Parasitology, and in 1981 — into the laboratory of the same name at the Department of Parasitology. The staff of this department continued researches on ecological physiology of parasites as a basis for protection of water environment and fish reproduction at industrial fish farms. Laboratory studies were focused on a comprehensive study of the host-parasite system by the example of fishes and their parasites. Quantitative methods were used in study of eco-physiological, biochemical, and genetic aspects of immunobiological adaptation of parasite and host, role of parasites as components of biocenosis, energy flow through the host-parasite system. Thanks to the introduction of the results of his work, in 1979–1980 significant economic effect in 188 thousand rubles was achieved.

During 1981–1985 O. Davydov supervised the theme "Ecological studies of host-parasite relationships for developing measures to control parasitic diseases at industrial fish farms." Fish parasites were studied in warm water of the basin-cooler on Kyiv heat electropower station No 5. The results were summarized in the monograph "Ectoparasites of carp in warmwater fish breeding" (1991). That time O. Davydov and laboratory staff developed new ways for entering medical preparation into the piscicultural facilities, offered to use permanganate baths to control ectoparasitoses. Temporary instructions for treatment of saprolegniosis of carp spawn at industrial breeding, prevention of ectoparasitic fish diseases in flow-type capacities were issued. While previously the focus was on the cestode-fish system, cestodiases and ways of their control (materials of these studies were summarized in the monograph "Host-parasite relationships at fish cestodiases", 1991), that time the main area of researches was the diseases caused by protozoans, monogeneans and parasitic fungi, as well as the effect of drugs on the ectoparasites and fish. Those years Otto Nikolaevich regularly consulted ichthyopathologists and fisheries staff on the use of certain drugs, their concentrations and the ways of application for the prevention and treatment of fish diseases.

In 1991, the laboratory was transformed into the department of environmental control of parasitic diseases of aquatic organisms. Researches were mainly focused on parasitic diseases in the fish farms of different types (pond, cage, basin) and the development of environmentally harmless technologies for parasitoses prevention (1991–1995). Later, during the study of parasitoses in the environment of toxic water pollution, more attention was paid to creation of rapid methods for diagnosis of early stages of fish diseases (infections, infestations, toxemia), development of integrated methods of treatment of infectious diseases and fish toxicosis at intensive fish farming (1996–2000). Under O. Davydov leadership, life-time and postmortem rapid methods of diagnosis of fish diseases: visual-behavioral, physical, chemical, physiological, biochemical and immunological were developed and tested in laboratory and industrial conditions. They allowed us to give perspective evaluation of consumer quality of the fish products throughout the whole period of the fish growth. Since in the Kyiv reservoir fishes with functional abnormalities and tumors were often detected, O. Davydov with the staff had been studying the effect of carcinogens on the

functioning of parasite-fish system (2001–2005). In 2003, the department was merged with the Department of Parasitology and transformed into the group for control of the fish parasitic diseases. O. Davydov was the head of this group. During this period, members of the team studied the effects of chronic pollution of the Kyiv reservoir on fish and its parasites, in particular, the distribution of ligulids and opistorhids larvae, epizootology of pike tumors, etc. Parasites were investigated as indicators and/or promoters of carcinogenesis. In the book "Diseases of the freshwater fish" (2004) O. Davydov has given the characteristic of 150 infectious and noncontagious diseases of fish living in natural waters and reared in artificial ponds.

Monitoring of commercial fish parasites and invasive species in the inland waters of Ukraine was conducted in 2006–2010. As a result of these studies, O. Davydov and co-workers showed qualitative and quantitative diversity of parasites (399 species) of fish depending on the host species, identified the number of species of epizootic (140) and epidemiological (10) value. Lists of parasites of fish used for the introduction and acclimatization in reservoirs of Ukraine (15 species), accidentally brought (4 species), and fish from the Ponto-Caspian complex self-dispersing into fresh water (14 species) were drawn up and given their taxonomic characteristics. Also there were listed hosts, areas of the finding and literature references.

Last years of his life (2011–2013), Otto Nikolaevich studied the biodiversity of parasites and structure of parasitic systems in common fish species exposed to a number of anthropogenic factors. Analysis of materials collected gave the evidence of the possible increased parasitic load on fishery water bodies in Ukraine, primarily due to increased fish infestation with parasites with direct development cycle.

In general, for 50 years of his scientific activity, 17 monographs, 8 scientific and popular papers, 347 articles and abstracts of conferences in Ukraine and abroad were issued from O. Davydov's pen. He also paid great attention to popularization of ichthyolparasitology. In addition to writing of popular scientific books, he appeared on television, wrote articles for on fish diseases the newspapers, lectured to the students, participated in Fish-Expo exhibitions in Kyiv, appeared on scientific and practical seminars organized by the Veterinary Service. Results of O. Davydov's works are widely used. He is the author of 24 patents for inventions, 10 rationalization proposals.

Despite the difficult O. Davydov's nature, his energy, enthusiasm and passion to science were communicated to everybody who worked with him, or just talk to him. After his passing away, we have lost a bright personality with inquiring mind, constantly looking forward, aimed at resolving the new challenges, involving in the area of his interests not only colleagues, but also those around him.

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