



**Nikolai Nikolaevich Smirnov  
(to the 90th anniversary of the birth)**

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**ABSTRACT:** This essay briefly documents the biography of one of the most senior Russian carcinologists, Professor Nikolai Nikolaevich Smirnov and his contribution to science — both his own scientific achievements, and the creation of a scientific school of specialists continuing research in his field.

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Professor Nikolai Nikolaevich Smirnov. August 2015, Lake Glubokoe Hydrobiological Station.  
Профessor Николай Николаевич Смирнов в августе 2015 г. на Гидробиологической станции «Глубокое озеро».

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**KEY WORDS:** Professor N.N. Smirnov, biography, Cladocera, Chydoridae, scientific school.

## **Николай Николаевич Смирнов (к 90-летию со дня рождения)**

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**РЕЗЮМЕ:** Данный очерк включает краткую биографию одного из старейших российских карцинологов, профессора Николая Николаевича Смирнова, и освещает его вклад в науку, представляя как его собственные научные достижения, так и создание научной школы специалистов, продолжающих исследования в его области.

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**КЛЮЧЕВЫЕ СЛОВА:** профессор Н.Н. Смирнов, биография, Cladocera, Chydoridae, научная школа.

This year we celebrate the 90<sup>th</sup> anniversary of N.N. Smirnov, one of the oldest Russian carcinologists, who started his research on cladocerans of the family Chydoridae in the late 1950s. Of course, we should honor Nikolai Nikolayevich as one of our outstanding colleagues. But the matter is not only this, but also the fact that thanks to him a creative environment and creative atmosphere developed in which the idea to organize carcinological conferences and the Russian Crustacean Society was born.

But the initial stages of the scientific way of Nikolai Nikolaevich did not foreshadow anything like that. He was educated in 1945–1950s at the Department of Hydrobiology of the Ichthyological Faculty of the Institute of Fishing Industry and Economy (Mosrybvtuz), at that time headed by the famous hydrobiologist Professor N.S. Gaevskaya. Here Nikolai Nikolaevich received a thorough education in general

biology and hydrobiology. During his postgraduate studies he specialized in biology and cultivation of protococcal algae and after the defense of his dissertation on the topic he was employed at the department as head of the museum, and later as assistant and associate professor.

The coup in his life was caused by an external factor — the transfer of Mosrybvtuz from Moscow to Kaliningrad City. N.N. Smirnov had to look for another place of work. On the advice of N.S. Gaevskaya, Nikolai Nikolaevich settled in 1957 in the Institute of Biology of Reservoirs (later Papanin Institute for Biology of Inland Waters of Russian Academy of Sciences) (at Borok, Yaroslavl Province on the Rybinsk Reservoir) in the laboratory headed by Professor F.D. Mordukhai-Boltovskoi. This move played a decisive role in the whole of his future. At that time, the Institute was still at the stage of formation, with the buildings being erected and em-

ployees recruited. Nikolai Nikolaevich wrote about that time: "I was in the sphere of influence of this distinguished zoologist, zoogeographer and biocenologist, connoisseur of history and a rare person. From the environment of predominantly experimental work I came into a powerful direction in which field investigations prevailed".

Here and then a transformation occurred from an experimental hydrobiologist in a zoologist *per se*, the real meeting with littoral crustaceans, basically with cladocerans (water fleas) of the family Chydoridae, which Nikolai Nikolaevich was interested in earlier. He embarked on active work with this major and, at the same time, poorly known group of freshwater invertebrates, namely on their morphology, taxonomy, functional morphology, faunistics, zoogeography, physiology, behavior. A number of articles were published in domestic and international journals, which was unusual for that time. As a result, the fundamental monograph "Chydoridae of the world fauna" was published (Smirnov, 1971) (later, in 1974, translated into English). It was prepared in an extraordinary short time for such a huge scientific work — for about 15 years. It was necessary to process samples from all over the world, to collect a huge and scattered literature, to conduct observations and experiments... It was the first case of a taxonomic revision and overview of the world fauna in a large group of microinvertebrates.

This was facilitated by a number of factors: first, to work in a scientific team that paid much attention to systematics, faunistics, and autecology of particular species, and was headed by F.D. Mordukhai-Boltovskoi, also deeply interested in these directions, working with the cladocerans of the order Onychopoda and publishing abroad as well.

Also, it is very important to take into consideration the general atmosphere of those years — the beginning of political changes, strengthening of international contacts, possibility to travel abroad. Nikolai Nikolaevich, who graduated from the Institute of Foreign Languages, was readily included in delegations to international

conferences, during which he could get acquainted with foreign colleagues, receive scientific material and literature. At that time this was a rare opportunity.

After this, there was a period of work in the Institute of Pond Fisheries near Dmitrov town (Moscow Area), then return to Moscow, work in the Presidium of USSR Academy of Sciences on the International Biological program, and inclusion in the staff of the A.N. Severtsov Institute of Evolutionary Morphology and Ecology of Animals (now Institute of Ecology and Evolution).

And a new turn again... In 1971, Academician V.E. Sokolov offers N.N. Smirnov to deal with the hydrobiological station "Glubokoe Ozero", and take the lead of the work there. A new team is being recruited, the construction of new houses begun, new publications on lake biology have begun to appear. In fact, this oldest Hydrobiological station in Russia received a new life and was saved from oblivion...

Studying the lake communities and providing research work on historical biocenology, Nikolai Nikolaevich did not forget the favorite morphology and systematic. He traveled and collected zooplankton samples actively in many countries: Somalia (1971), Iraq (1974), Australia (1975), Argentina (1981), Nicaragua (1985, 1988), and Mexico (1998). Also he participated in a number of international scientific events, in particular, the participation in the 1st Tropical Zooplankton meeting in Sao Carlos (1982) is worth mentioning. In 1990, he visited the Zoological Museum in Oslo (Norway) to work with the collection of the famous carcinologist G.O. Sars. In the 1990s, he took part as a teacher at the International zooplankton courses in Ghent University (Belgium). The prestigious grant he received from the Belgian Academy of Sciences (2001), brought him to Brussels for three months. That time, a number of identification books — on Macrothricidae and Moinidae of the world (Smirnov, 1976), revision of the Australian Cladocera (Smirnov, Timms, 1983), followed by guides of the European series (Smirnov, 1992, 1996), a new Russian guides and many papers on the subject were published.

But the most important creation of N.N. Smirnov remains the training of a close team of younger colleagues and followers, a scientific school which have expanded and continues comprehensive studies on Cladocera of the world fauna. In doing this, he was a follower of his senior mentor F.D. Mordukhai-Boltovskoi, who created an extensive research collective of freshwater zoologists. It is the creation and maintenance of the long-term work of these research groups that led to the birth of the idea of the organization of carcinological conferences and the Russian Crustacean Society, as mentioned above. It is worth recalling that these conferences were preceded by more particular meetings on Cladocera and Crustaceans of continental waters in Borok in 2007 and 2012, respectively.

One of the main passions of Nikolai Nikolaevich, thanks to his philology talents, was the compilation, together with the interested colleagues-biologists, of English-Russian and Russian-English biological dictionaries. Overall, eight such volumes were published, not counting other, already his personal works on English philology.

The well-known biologist B.S. Kusin wrote that the psychoperception of morphologist-systematics and “physiologists” in a broad sense are incompatible. But Nikolai Nikolaevich did not obey this rule, because he has long been interested in “internal vital functions” of his favorite Cladocera, published several articles on the subject and later wrote a great review on the topic. As a result, two editions of the monograph “Physiology of the Cladocera” (Smirnov, 2014, 2017) appeared.

All Russian carcinologists congratulate Professor Nikolai Nikolayevich Smirnov with a glorious anniversary, wish him good health and further success in his work!

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