

DANILOVA NATALIA STEPANOVNA
(on the 90th anniversary)

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The paper encompasses scientific career landmarks of Natalia S. Danilova, PhD in geography, a remarkable representative of world-known school of Russian Geocryologists of the Obruchev Permafrost Institute, the USSR Academy of Sciences. A highly qualified specialist in the field of regional and historical geocryology, Natalia S. Danilova has studied geocryological conditions and cryogenic formations within oil, gas, diamond, coal fields, etc. In collaboration through co-authorship with V.V. Baulin she has published a number of papers on history of permafrost development, as well as a series of geocryological maps.

Geocryological conditions, frost cracks, wedge ice, sand wedges of primary infilling



Natalia S. Danilova, Candidate of Sciences in geography, turned 90 on June 13, 2017. She is a leading specialist in regional and historical geocryology who dedicated 40 years of her professional experience to the study of permafrost conditions and cryogenic formations in different permafrost regions and areas of permafrost distribution.

After graduating school in 1947 she became a student at Faculty of Geography of Lomonosov Moscow State University. She was lucky to have made early acquaintance with “the eternal frost” (permafrost) during her first field experience in 1949, the summer practice which was set up on Taimyr peninsula under the scientific guidance of Alexander. I. Popov, an outstanding Russian geocryologist. The Popov’s “permafrost team” as part of the joint AN SSSR and GUSMP (Chief Directorate of the Northern Sea Route) expedition participated in excavations of the uncovered intact mammoth body frozen in the permafrost stratum in the Nizhnyaya Taimyra

(now, Mamontovka) river valley. The aim of the expedition was to provide insights into the region’s past, by determining the mammoth age and clarifying the living conditions of now extinct beasts and causes of their death. Among other purposes was the carcass transportation to the Center.

It was while undertaking her practice on Taimyr that Natalia S. Danilova became fascinated with the severe but beautiful nature of Siberia, and studied peculiarities of the composition and cryogenic structure of permafrost. It is no coincidence that upon graduation from Moscow State University in 1953 she applied for postgraduate study at the V.A. Obruchev Permafrost Institute, the USSR Academy of Sciences, Moscow. The Institute staff under general supervision of its director M.I. Sumgin produced from its ranks a team of researchers that, owing to the accession of enthusiastic postgraduate students, evolved into a school of geocryology with the mission to study seasonal and perennial frost (permafrost). N.S. Dani-

lova was supervised by Doctor of Geographical Sciences, Professor Ivan Y. Baranov. In 1956 Natalia S. Danilova successfully defended her thesis titled "Perennially frozen strata and geocryological-geological phenomena in the lower reaches of the Ob river: evolution history" and was awarded the degree of Candidate of geographical sciences.

In the context of geocryology, Natalia S. Danilova has succeeded as an excellent expert in regional studies ("regionalist"). In the period from 1956 to 1962, she worked in Yakutia in expeditions of the North-Eastern Department of the Obruchev Permafrost Institute, the USSR Academy of Sciences. Natalia S. Danilova studied permafrost conditions of the new iron-ore and coal deposits (Southern Yakutia), along Lensk–Mirny route, in the Lena river delta (Northern Yakutia), and those in the Vilyui (Central Yakutia) and Podkamennaya Tunguska river basins following the discovery of diamond deposits there. From 1963 to 1987, Natalia S. Danilova was employed with the Industrial Production and Research Institute for Engineering Construction Survey (PNIIS) under the USSR State Committee for Construction (Gosstroy). She studied the engineering-geocryological conditions of the areas of new oil and gas production fields in Western Siberia.

Numerous field research conducted by Natalia S. Danilova consisted for the most part in measuring sediment temperature; thickness, composition and ice content of the active layer, and in studying the cryogenic structure and ice content of the upper horizons of permafrost. Natalia S. Danilova devoted a special attention to analysis of ice wedge formation conditions and polygonal structures developed from the open frost cracks containing sand as a primary infilling, into so-called sand wedges. The 1:100 000, 1:25 000 and 1:10 000 engineering-geocryological maps compiled by N.S. Danilova for each of the studied areas, as well as for those along the pipeline routes, have proven to be practically valuable and instrumental in their subsequent exploitation. Thanks to her ceaseless efforts in the systematic studies of the geocryological conditions and cryogenic formations

in different regions of Russia for several decades, Natalia S. Danilova has become a vivid example of how a person dedicated to study and work has made an important contribution to the world recognized school of geocryologists of the Obruchev Permafrost Institute, the USSR Academy of Sciences.

Natalia S. Danilova is the author of more than 30 works, including chapters and sections in the collective monographs listed below: "Fundamentals of geocryology. Part 1" (1959), "Geocryological conditions of Central Siberia" (1974), "Geocryology of the USSR. European North" (1988), "Geocryology of the USSR. Western Siberia" (1989). A special mention deserves the "V.A. Obruchev Institute of Permafrost, the USSR Academy of Sciences (1939–1963)" monograph, with academician V.P. Melnikov as Editor-in-chief (2007), which gives a detailed account of most prominent landmarks of the appearing permafrost science (geocryology), of organizational structure history of the Obruchev Permafrost Institute, and individual scientific careers of its employees. Contributors to the monograph: N.S. Danilova (redactor), V.V. Baulin and 18 employees of the Institute. At this, out of in total 35 sections of the monograph, 13 were written by Natalia S. Danilova personally, and 8 in co-authorship.

Her specific research interests include the development history of permafrost strata. She has several scientific papers and geocryological maps as joint publications with V.V. Baulin, among them are: "Historical development of permafrost at the territory the USSR and methods of its study" (1981), "Principles and methods of studying history of development of the cryolithozone" (1988), "Evolution of modern permafrost in Western Siberia" (2007).

N.S. Danilova was awarded the "Socialist Competition Winner of 1973" badge in 1974, and the "Veteran of Labor" medal for many years of conscientious work in 1983.

We are happy to congratulate Natalia Stepanovna on her jubilee, wishing her good health, long and happy life during the years of her well-deserved retirement.