

*CHRONICLE*

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**ALDAR PETROVICH GORBUNOV (11.08.1927–19.12.2018),  
ALPINE PERMAFROST RESEARCHER**

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The life and career of the outstanding permafrost scientist Professor Aldar Petrovich Gorbunov, Doctor of Geographical Sciences, are described. His contribution to the Earth's alpine permafrost research and to popularization of scientific knowledge is reviewed.

*Geocryology, alpine permafrost, alpine physical geography*



On December 19, 2018, Professor Aldar Petrovich Gorbunov, Doctor of Geographical Sciences, the outstanding permafrost scientist and glaciologist and the well-known science writer, passed away at the age of 91.

Aldar Gorbunov was given his rare name four months before his birth, when in April 1927, the world-famous thinker, traveler and thinker Nicholas Roerich visited the home of his parents Petr Vasilyevich Vsesvyatsky and Yelena Petrovna Gorbunova, who were working in Mongolia then. Roerich and his team were on their way to Tibet. Seeing the expecting mother, Roerich said to the future parents, “If a boy is born, give him the name of Aldar. This name will bring him luck and happiness”.

Despite the hardships of Aldar's childhood and youth, related to false denunciation and execution of his father in 1938, the second year of Stalin's purges, and the difficult war and post-war years, the prophecy of Roerich came true. The life of the scientist Aldar Gorbunov proved to be fortunate and happy.

In 1946, he entered the geography department of the Alma-Ata pedagogical institute named after Abai. He was fortunate as a student, as at that time such experienced, well-educated and dedicated lecturers were members of the physical geography faculty as Professor A.A. Glagolev, Associate Professors N.G. Rybin and M.A. Glazovskaya. At their lectures, and, most importantly, in the field trainings, expeditions and training tours, they instilled interest for

studying the unique nature of alpine countries in their students.

In 1950, Aldar Gorbunov graduated from the institute with honors and was recommended for studies in the graduate school of the physical geography faculty, a member of which he later became. The choice of subjects for his candidate's thesis was limited, as Aldar Petrovich, as the son of 'the enemy of the nation', had no access to topographic maps, without which it was impossible to carry out expedition studies. By the advice of his older colleagues, he started historic and geographical studies of Kazakhstan. And here again, Aldar Gorbunov was fortunate to have Professor Lebedev, an eminent specialist in the history of the geographical studies of Russia of the XVII–XVIII centuries, the author of many monographs, and the researcher of the Institute of Geography of the Academy of Sciences of the USSR, as the supervisor of his dissertation work. Professor Lebedev was an outstanding representative of pre-revolutionary Russian scientific intelligentsia and a wise teacher. Aldar Gorbunov learnt to be thankful to his predecessors and attentive to source documents, he learnt to express his ideas clearly and convincingly from his teacher. In 1954, he successfully defended his dissertation of a candidate of geographical sciences in Moscow at the sitting of the dissertation

council of the Institute of Geography on the subject "The History of Physical and Geographical Studies of Kazakhstan (XVII, XVIII, XIX centuries)".

From 1954 to 1968, Aldar Petrovich Gorbunov worked in the faculty of physical geography of the Alma-Ata pedagogical institute. In that period, the father of Aldar Petrovich was rehabilitated, and Aldar Petrovich was relieved from all the limitations regarding the use of topographic materials. He started his own studies of permafrost of the alpine regions of the world. His first scientific paper, devoted to the results of studying the frozen rocks of the syrts (uplands) of Tien Shan, was published in 1958.

From 1968 to 1971, Aldar Petrovich worked in the Kazakhstan Hydrometeorology Research Institute, in which he was the head of the sector of glacial mudslides. Under his guidance, the detailed studies of glacial moraines, of their composition, structure and age were conducted, with the focus on interaction between thawed glacial waters and frozen moraine deposits.

In 1971, Aldar Petrovich Gorbunov became a researcher of the Permafrost Institute of the Academy of Sciences of the USSR. First he worked under supervision of P.A. Soloviev as a member of the mapping team and then he organized and headed the Kazakhstan alpine permafrost station of the institute, later



**On the way to the alpine permafrost station of the Permafrost Institute, Academy of Sciences of the USSR (1978).**

A.P. Gorbunov (left) and E.V. Severskiy.

transformed into the Kazakhstan alpine permafrost laboratory, the workers of which conducted permafrost studies not only in Tien Shan but also in Pamir Altai, Djungar Alatau and other alpine regions of the country.

In December 1974, Aldar Petrovich Gorbunov successfully defended a doctorate thesis in the geography department of the Moscow State University titled "The Permafrost Circle of Tien Shan", to become one of the youngest doctors of science in the Permafrost Institute.

After defense of the doctorate, the geocryological studies conducted by Dr. Gorbunov acquired a universal planetary character. He took part in joint expeditions to study the alpine permafrost in Mongolia, China, India, Canada, USA, Switzerland, Austria, and other countries. When summarizing the materials of the studies, he developed the regional schematic maps of alpine permafrost zonality, mapped the permafrost structures of alpine territories, investigated the landscape-transforming role of permafrost in the alpine countries of the world, explored the buried glacier ice and different cryogenic events and processes in the alpine regions (stone glaciers, flood ice, thufurs (hummocks), polygonal formations, suffusion (subsurface erosion), solifluction, etc.).

In the years that followed, Dr. Gorbunov organized and conducted permafrost monitoring studies not only in Tien Shan and Pamir but also in the other alpine regions of the world. Considering the fundamental scientific results obtained by Aldar Petrovich Gorbunov, he can be rightfully named the founder of the teaching of alpine permafrost of the Earth. From 1988 to 1998, he was a member of the alpine permafrost working group of the International Permafrost Association, and beginning with 1995, he was the

permanent representative of Kazakhstan in this international organization.

Aldar Petrovich Gorbunov paid serious attention to raising new scientists. He delivered lectures in different universities and institutes of Alma-Ata for nearly 65 years. Many candidate's and doctorate theses were successfully defended under his guidance. Over his long life of a teacher, researcher and organizer of science, he wrote 300 works, which were published in Russian, English, French, Kazakh and Uzbek languages. Among the books written by Aldar Petrovich Gorbunov, the most famous are "The Permafrost of Tien Shan" (1967), "The Stone Glaciers of the Mountains of Central Asia" (1989), "The Geocryological Conditions of Tien Shan and Pamir" (1996, co-authored), "The Mountains of Central Asia" (2009, in Russian and in English), "The Geography of the Stone Glaciers of the World" (2010, co-authored).

Aldar Petrovich Gorbunov was well-known also as an excellent science writer. He wrote not only articles published in the popular magazines "Priroda" and "Nauka i Zhizn" but also the following popular science books, which received numerous praises from the readers: "Permafrost in Kirgizia" (1966), "Underground Ice" (1982), "Stone Glaciers" (1988), "Permafrost, the Keeper of Ancient Treasures" (2000, co-authored), "The Country of Mountains and Steppes" (2001, co-authored), "Alpine Permafrost: from the Equator to Polar Latitudes" (2003), "The Geographical Names in the Mountains of Central Asia" (2005).

All those who have been fortunate to know and work with Aldar Petrovich Gorbunov will certainly remember this time as blessed by his talent and personality. The heritage of this outstanding scientist and science writer will certainly be welcomed by the future generations of the alpine permafrost researchers.