

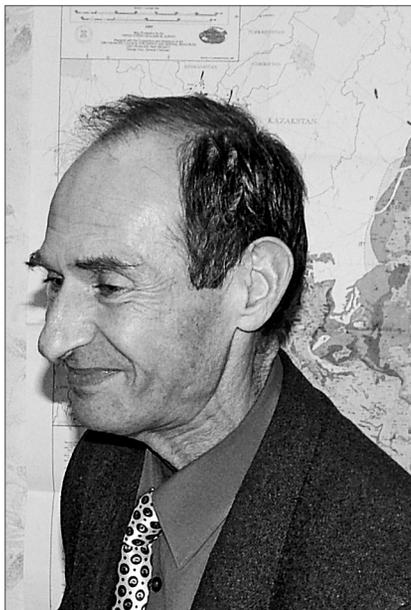
PERLSHTEIN GEORGY ZAKHAROVICH
(on the 80th anniversary)

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On the 5th of October, 2017, a prominent scientist, doctor of science in geology and mineralogy, Professor Georgy Zakharovich Perlshtein celebrated his 80th anniversary.

Reclamation of rock, heat transfer, heat pumps



After graduating from the Moscow State University, Georgy Perlshtein started his career in Magadan in the All-Union Research Institute-1. A year after, he began to work in expedition 104 of the geology department of the Moscow State University as a junior researcher and head of a survey crew. Georgy Perlshtein took part in the permafrost studies in Bodaibo, one of the largest gold production centers of the Soviet Union. In 1965, he became a student of the MSU graduate school, continuing to work in the Yakutsk expedition of the permafrost studies faculty. He defended a candidate's thesis in 1968 titled "*The Influence of Water Infiltration on Thawing of Sandy and Rudaceous Rock*" and returned to Magadan to continue working in the All-Union Research Institute-1 as a senior researcher.

In 1973, Perlshtein was appointed head of the permafrost laboratory, and in 1982, he headed the research team of hot water preparation of permafrost rocks for excavation. The team's work had an objective to improve the technology of gold production under permafrost conditions. At that time, it was not

called an innovation; however, due to the contribution of the research team, millions of rubles were saved in the production of gold.

From 1989 to 2002, Perlshtein was the head of the North-Eastern department of the Melnikov Permafrost Institute (MPI) of the Siberian branch of the USSR Academy of Sciences, which in 1994 was reorganized into the North-Eastern Permafrost Station of the Melnikov Permafrost Institute (MPI) of the Siberian branch of the USSR. From 2002 to 2016, Georgy Perlshtein headed the geocryology laboratory and was the chief researcher of the Sergeev Geocryology Institute, Russian Academy of Sciences.

In 1983, Perlshtein defended his doctorate thesis titled "*The Foundations of Hot Water Reclamation of Permafrost Rocks (with the Example of Placer Gold Deposits of the North-East of the USSR)*". He developed and patented the geocryological foundations of the method of permafrost preparation, which included melting and draining of the permafrost, different from the other methods in that the drainage was conducted below the prepared layer by the width of the

capillary fringe, which resulted in a significant economic effect. The details of the method were presented in the monograph titled “*Hot Water Reclamation of Permafrost Rocks in the North-East of the USSR*” (1979). The monograph contains the main achievements and discoveries made by Georgy Perlshtein and describes the regularities of heat transfer in melting permafrost rocks, the details of the technology of disperse soils thawing based on conductive heat transfer, hydraulic melting and warming of permafrost by using internal heat sources, the methods of protecting thawed ground from seasonal freezing, the methods of preparing artificial sushenets (dry spaces between ice and ground) and the details of designing hot water reclamation in the development of gold placer deposits.

Perlshtein developed the “*Temporary Instructions for Filtration- and Drainage-Based Thawing and Preparation of Artificial Sushenets*” (1979), wrote parts in the monographs “*Thermal Physical Studies of Siberian Permafrost*” (1983) and “*The Geocryology of the USSR. East Siberia and the Russian Far East*” (1989).

Perlshtein’s scientific interests are strikingly broad: heat transfer in porous media, the use of natural resources of heat and cold, solution of the problems of geoecology in the permafrost territories – these are but a few directions of Professor Perlshtein’s research. In the 21st century, he focused on further development of the theory of heat transfer through the Earth’s surface, allowing consideration of a number of non-thermal factors and improvement in the accuracy of geocryological prediction. Interesting calculations were made for the use of thermal pumps as a tool for controlling the ground heat transfer in the behavior of building foundations. More than 80

publications contain the description of the precious knowledge accumulated by Professor Perlshtein and shared by him with the geologists’ community.

For 20 years, since 1997, Georgy Perlshtein has been a member of the editorial board of “*Kriosfera Zemli (Earth’s Cryosphere)*” journal, actively participating in its work both as an author and a reviewer.

The Russian government highly evaluated the contribution of Georgy Perlshtein: in 1989 he was awarded the rank of the honored researcher of the Russian Federative Republic, and in 1996, he was granted the title of a professor. Georgy Perlshtein has been more than once rewarded for his effective technological solutions and has been awarded with a medal of a “Veteran of Labor”.

The vast outlook of Georgy Perlshtein, his scientific achievements and his gift for communication have made him a prominent figure not only in the Russian science but also globally. The International Geocryologists’ Society has elected Georgy Perlshtein Vice-President of the International Permafrost Association (IPA) for the period of 2003–2008. His active participation in international projects, numerous friends and associates, and participation in the organizing committees of many international scientific conferences – these are the benchmarks of Professor Perlshtein’s scientific life.

Georgy Perlshtein is a man of a great soul, outgoing and friendly, with a vivid interest for literature, music, sports, with a fine sense of humor and acute intellect.

For his anniversary, we, his numerous colleagues and friends, wish Georgy Perlshtein good health and long years of life!