

GEORGY ZAKHAROVICH PERLSHTEIN
(05.10.1937–26.08.2020)

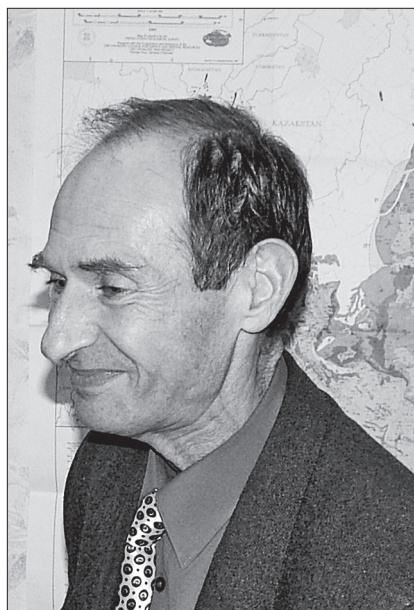
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On August 26, 2020, a renowned scientist, Doctor of Geological and Mineralogical Sciences, Professor Georgy Zakharovich Perlstein passed away. For many years, he worked in Magadan at VNII-1, was the head of the North-Eastern branch of the Melnikov Permafrost Institute, SB RAS, the head of the geocryology laboratory at the Institute of Environmental Geoscience, RAS, a member of the editorial board of the “Earth’s Cryosphere” journal. His name is well-known both in Russia and abroad. The good memory of Georgy Zakharovich, his outstanding working and human qualities will live in the hearts of the people who knew him for his work and life.

Georgy Zakharovich Perlstein, permafrost, warm water amelioration



Georgy Zakharovich Perlstein was born in Moscow in 1937. After finishing the secondary school in 1954, he entered the geology department of the Moscow State University. Having graduated from the university in 1959, Perlstein started his professional career in Magadan in the All-Union Research Institute (VNII-1). A year after, he started to work in expedition 104 of the geology department of MSU in the position of the head of the survey unit and a junior researcher and took part in the geocryological research in Bodaibo, one of the largest gold-mining centers of the USSR.

In 1965, Georgy Perlstein became a graduate student of MSU, continuing to work in the Yakutsk expedition of the permafrost chair. Having defended his candidate’s thesis in 1968 on the impact of water on thawing of sandy and rubble rocks, he returned to

Magadan to work in VNII-1 in the position of a senior researcher.

In 1973, Georgy Perlstein occupied the position of the head of a laboratory in the permafrost department, and in 1982, he headed a research group of warm water amelioration of permafrost soil. The group’s work was aimed at optimization of the technologies of gold mining under permafrost conditions: thanks to the group’s contribution to gold production studies, millions of rubles were saved.

In 1983, Georgy Perlstein defended a doctorate “The Basics of Warm Water Amelioration of Frozen Soil (by the Examples of the Placer Mines of the North-east of the USSR)”.

From 1989 to 2002, he headed the North-eastern affiliate of the Melnikov Permafrost Institute, SB RAS, which in 1994 was reorganized into the North-

eastern permafrost research station of the Melnikov Permafrost Institute, SB RAS.

From 2002 to 2016, Georgy Perlshtein worked as the head of the geocryology laboratory and the principal researcher of the Sergeev Geoecology Institute, RAS.

Georgy Perlshtein is well-known in the scientific community for his works on artificial thawing of frozen soil. He developed and patented the geocryological substantiation of the method of preparing frozen soils, which included thawing and draining of frozen soils, in which draining was conducted below the prepared stratum by the value of the capillary margin, which ensured a significant economic effect. The detailed description of the method was published in the monograph "Warm Water Amelioration of Frozen Soil in the North-east of the USSR" (1979). The monograph contained the main achievements and discoveries of Georgy Perlshtein: the discovered laws of heat and mass transfer in thawing frozen soils, the details of thawing of disperse soils based on conductive heat transfer, hydraulic thawing, warming of soils under the impact of internal heat sources, methods of protecting thawed soils from seasonal freezing, methods of preparing artificial empty areas and details of designing warm water amelioration measures in working in placer gold mines.

Georgy Perlshtein developed "The Temporary Instructions on Filter-Draining Thawing and Preparation of Artificial Empty Areas" (1979), he wrote parts of the monographs "Thermal Physics Research of the Permafrost Zone of Siberia" (1983) and "Geocryology of the USSR. Eastern Siberia and Russian Far East" (1989). He developed the theory and mathematical models of the methods of hydraulic thawing of frozen soils, principles and methods of reducing solidity of freezing productive placer horizons by way of draining drying; he investigated convective heat exchange in rubble and sandy soils.

The scientific interests of Georgy Perlshtein were extremely broad: heat and mass transfer in porous media, the use of the natural resources of heat and cold, solution of geoecological issues in the permafrost regions – this is but an incomplete list of the vectors of his activities. In the 21st century, Georgy Perlshtein focused on working at the theory of heat and mass exchange via the Earth's surface, which al-

lowed scientists to consider a number of non-temperature factors and to raise the degree of precision of geocryological predictions. A number of interesting calculations were made for effective application of heat pumps as a tool of control over the heat exchange between the ground and building foundations. The results of the investigations conducted by Georgy Perlshtein were reflected in more than a hundred publications, including several monographs and invention certificates.

Over many years, Georgy Perlshtein was an active member of the doctorate thesis council of the MPI, SB RAS.

From the foundation of the Earth's Cryosphere journal in 1997, Georgy Perlshtein was one of the most active members of the editorial board of the journal, and in 2003–2008, he participated in the work of the editorial team. His contribution to the journal work both as an author and a reviewer is invaluable.

The government highly evaluated the work of Georgy Perlshtein: in 1989, he was awarded with the title of the honored scientist of RSFSR, and in 1996, he was conferred the title of a professor. Georgy Perlshtein repeatedly received bonuses for the effective technological solutions and was awarded with the medal "Veteran of Labor".

The scientific achievements of Georgy Perlshtein, his rich outlook and charisma enabled him to become a remarkable persona in science. The international permafrost community elected Georgy Perlshtein Vice-President of the International Permafrost Association (IPA) for the period of 2003–2008. Active participation in international projects, numerous friends, participation of the work of organizing committees of many international scientific conferences – these are the benchmarks of his distinguished career in science.

Georgy Zakharovich Perlshtein was a remarkable outgoing person with a warm attitude to people, a vivid interest for literature, music, sports, a fine sense of humor and an acute mind.

The good memory of Georgy Zakharovich, his outstanding working and human qualities will live in the hearts of the people who knew him in his work and life.

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