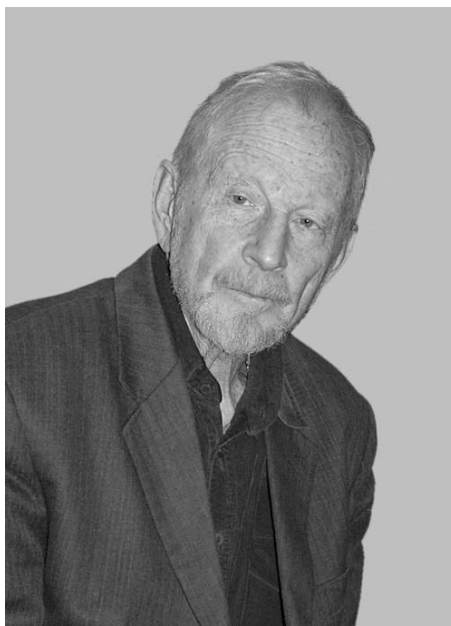

IN MEMORIAM

Valentin Dmitrievich Tonkonogov

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An eminent Russian pedologist and Head of the Department of the Genesis, Geography, Classification, and Cartography of Soils of the Dokuchaev Soil Science Institute, Doctor of Agricultural Sciences Valentin Dmitrievich Tonkonogov passed away on June 21, 2008, in the 73rd year of his life after a long and courageous struggle with a painful illness. Tonkonogov was a remarkable person, a genuine scientist, a passionate and persistent investigator of tundra and taiga areas of northern Russia, and one of the creators of the new classification system of Russian soils.

His scientific career at the Dokuchaev Soil Science Institute included all the stages from a junior researcher to the head of the major department that was headed in different years by outstanding Russian pedologists such as L.I. Prasolov, I.P. Gerasimov, E.N. Ivanova, and V.M. Fridland. Together with his honorable position, Tonkonogov took responsibility for the preservation of the scientific traditions shaped by these scientists and for the development of their rich heritage, including the completion of the long-term work on compilation of the State Soil Map of Russia and the improvement of the Russian soil classification system.

The scientific biography of Tonkonogov is typical of his generation of researchers. In 1953, after finishing secondary school, he entered the Geographical Faculty of Moscow State University. Under the supervision of

Prof. M.A. Glazovskaya, he gained rich experience in field soil studies in the southern Ural region; his diploma work was devoted to this area. Up to the end of his life, he highly respected his dear teacher and maintained friendly relations with her.

Upon graduation from the university, Tonkonogov was lucky to take part in the Kamchatka Expedition organized by the Council on the Study of Productive Forces of the Soviet Union at the Russian Academy of Sciences. He worked in this land of wonder for three years; later, he dreamed about visiting Kamchatka once more for several decades. Fortune granted him a short visit after 40 years, and he was grateful for this long awaited present.

In 1962, Tonkonogov became a staff member of the Department of the Genesis, Geography, and Classification of Soils of the Dokuchaev Soil Science Institute. This was a period of active work on compilation of the State Soil Map of the Soviet Union (1 : 1 M scale); geographic and genetic soil studies were developed under the umbrella of this large-scale program. All the researchers of the department participated in field soil surveys; their materials served as the basis for new monographs and dissertations. Tonkonogov was involved in soil-geographical studies of the European north of Russia under the supervision of E.N. Rudneva.

Rudneva's interests were focused on loamy podzolic and gley-podzolic soils as typical zonal soils. Tonkonogov studied podzols developing from poor quartz sands that escaped the attention of Russian pedologists. The poor chemical composition of these soils and the absence of the features of textural differentiation in their profiles made them not a very interesting object for pedologists. Elder colleagues tried to dissuade Tonkonogov from studying these soils and called his research a Sisyphian toil. Tonkonogov joked "The difference between Sisyphian toil and scientific research is often far from evident."

In those years, it was difficult to foresee the fundamental importance of his studies. Tonkonogov developed the concept of chemogenic differentiation of soils; he clearly showed that sandy podzols should be distinguished from texturally differentiated loamy podzolic soils at a high taxonomic level despite the similarity of the bioclimatic conditions of their development. Tonkonogov studied podzols of different natural zones (from the northern taiga zone to the forest-steppe zone) and demonstrated that their major properties are preserved within this range of bioclimatic conditions. He argued that the chemical and mineralogical properties of the substrate are more important factors controlling the development of podzols than the bioclimatic conditions. In the 1970s, when the priority of bioclimatic factors in soil genesis was rarely disputed by Russian pedologists, this position of Tonkonogov was far from popular. The defense of his candidate dissertation was the real defense of an interesting dispute; it greatly impressed the participants.

Afterwards, Tonkonogov continued the study of chemogenically differentiated soils; he distinguished a specific type of iron-differentiated taiga soils—*svetlozems*—and described their area and the geographic regularities of the changes in their properties.

In the mid-1970s, the major sphere of scientific interest of Tonkonogov—the genesis, geography, and evolution of soils in humid regions beyond the tropics—was clearly shaped. One of the central problems of pedology—the genesis and geography of clay-differentiated soils—was thoroughly studied by Tonkonogov for more than 10 years. He compared these soils developing in West Siberia and on the Russian Plain. He also studied analogous soils on piedmont plains in the Carpathian region of Ukraine and in the northern Caucasus region, in the Transcaucasus region, in the Far East of Russia, and in France. On the basis of these extensive materials, the concept of selective destruction of the least stable clay minerals as the main mechanism of the development of these soils was formulated. The zonal and regional specificity of the development of the textural differentiation in these soils forming on homogeneous mantle loam and on contrasting deposits was described. Tonkonogov demonstrated that a microprofile (subprofile) of Al-Fe-humus podzols is often formed within the eluvial part of the profile of texture-differentiated soils. His geographic and genetic studies

enriched our notions about texture-differentiated soils as polygenetic and polychronous soils.

The results of these long-term investigations were defended by Tonkonogov as his doctoral dissertation. They were generalized in the monograph "Clay-Differentiated Soils of European Russia," one of those books that form the solid basis of modern pedology and are characterized by rich and reliable factual materials and the deep theoretical analysis of the problem.

In recent years, Tonkonogov studied soils in ecotone zones between tundra, forest-tundra, and northern and middle taiga in the northeast of European Russia. These studies were performed by Tonkonogov in cooperation with I.V. Zaboieva and his postgraduate students from the Institute of Biology of the Komi Research Center of the Russian Academy of Sciences, representatives of the strong school of pedology created in the Komi Republic by Prof. E.N. Ivanova.

A no less important sphere of scientific interest of Tonkonogov was related to the development of soil classification. As many researchers from the department, Tonkonogov participated in the creation of two ecological-genetic soil classification systems (1967 and 1977) under the supervision of Prof. E.N. Ivanova. Thus, he knew all the advantages and disadvantages of these systems from inside. He highly appreciated the positive role of these systems in the development of Russian pedology. At the same time, he understood that this approach (the ecological-genetic or factor-genetic approach) with the dominant role given to the factors of soil formation rather than to the soils themselves yields little promise for the future. Therefore, he eagerly responded to the idea of V.M. Fridland about the need to develop a new substantive-genetic soil classification. After the death of Fridland, Tonkonogov, together with L.L. Shishov and I.I. Lebedeva (and, later, together with M.I. Gerasimova), headed the work on the development of this new classification system of Russian soils. The first version of the system was published in 1997. This is an open and hierarchical system based on the substantive soil properties reflected in the system of soil horizons and features. For the first time, it included the entire diversity of natural and anthropogenically transformed soils. Three editions of this system were published (in 1997, 2000, and 2004). On the basis of the latest edition, the "Field Guide to Soils of Russia" was prepared by Tonkonogov with coauthors. Unfortunately, it was published a few weeks after Tonkonogov's death.

Tonkonogov is the author of more than 160 publications, including four monographs. For many years, he honestly served soil science as a member of the Higher Attestation Committee, a member of the Central Council of the Dokuchaev Soil Science Society, Executive Editor-in-Chief of the journal "Pochvovedenie," and vice-chairman of the Interdepartmental Commission on Soil Classification.

Valentin Tonkonogov was a man of action and high mobility with a passionate love of life. He was very

much interested in events and the people around him and tried not to miss new movies, theater performances, art exhibitions, and books. He enjoyed the music of Mozart and Mahler and could not afford to spend enough time on leisure reading. He was a tireless traveler and liked to visit new places and new countries as a participant in expeditions or conference tours; tourist trips were also included in his schedule. Fortunately, the recent decades gave him such a possibility.

For three years, Tonkonogov had to fight cancer; he took several courses of chemotherapy. After the treatment, as soon as he felt better, he plunged into his dear work with new energy. He participated in several difficult northern expeditions and in several conferences. People around him could never have guessed about his illness, and those who knew could not but forget about it. Tonkonogov did his best to have his major deeds finished in time: several postgraduates supervised by Tonkonogov defended their dissertations, a new monograph on the genesis and geography of soils in the Russian North was written, a soil map of Russia based on the new classification was compiled, and photos for the new "Atlas of Russian Soils" were selected...

A thorough researcher and the author of classical works on the genesis of soils, a wise and responsible leader, a somewhat ironic person with an excellent sense of humor, and a true patriot of Russia, Tonkonogov was an example of the Russian intellectuals portrayed by Chekhov. He was an easy and a very modest person, though he firmly defended his scientific views and civil position.

The death of Tonkonogov is an irreplaceable loss for Russian soil science. His scientific talent and his devotion to science were really inspiring. His death is a bitter loss for his friends and relatives and for all those who worked with him or just enjoyed the company of this wise and charming person.

The works of Tonkonogov will surely stand the test of time, and his name is already inscribed in the history of Russian soil science.

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