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CHRONICLE

The 90th Birthday of Tat'yana Vyacheslavovna Aristovskaya

In October 2002, T.V. Aristovskaya, a prominent Russian soil microbiologist, a Doctor of Biology, a winner of the Dokuchaev and Williams Prizes, celebrated the 90th anniversary of her birth.

Aristovskaya was born in Kazan. Her father, Vyacheslav Mikhailovich Aristovskii, was a full member of the Academy of Medical Sciences, a major-general of the medical service. Her brother followed his father's career and became a physician. Aristovskaya studied at the Department of Biology, Leningrad State University, and did her postgraduate work at the laboratory of microbiology of the Lesgaft Institute of Natural Sciences under the guidance of the famous Russian microbiologist G.L. Seliber. Her candidate's dissertation, which she defended in 1940, was devoted to the study of carbon dioxide reduction by heterotrophic bacteria. Aristovskaya served as a researcher at this Institute until 1945, spending the wartime period in evacuation (in Kazan and then Samarkand), where she systematized the experimental data obtained earlier.

In January 1945, Aristovskaya left for Kirov, Murmansk oblast, where she began working as a senior researcher at the Soil Section of the Kol'sk Station of the USSR Academy of Sciences, concentrating on the problems of soil microbiology. Her experimental experience and deep knowledge in the field of soil microbiology led Aristovskaya to the organization of her own laboratory of soil microbiology at the Central Museum of Soil Science in Leningrad, which she headed over a period of 35 years.

Close cooperation with soil scientists and the employment of the capillary microscopy technique, proposed by B.V. Perfil'ev for the study of microorganisms in sludges and muds, allowed the researchers of the laboratory to initiate and develop a soil–genetic line of microbiological investigations. The scientific achievements of Aristovkaya's laboratory were recognized not only in her own country but also abroad.

The in situ investigations of microbial communities in various soil types allowed the Aristovskay'a group to demonstrate the close interactions between various microorganisms and protozoans, which adsorb on soil particles and are concentrated around fungal hyphae. It was also found that microorganisms determine the chemical composition of soil horizons and the soil profile as a whole and are involved in the formation of manganese nodules.

The role of microorganisms (bacteria in particular) in the soil formation processes is described in detail in Aristovskaya's book *The Microbiology of Soil Formation* (1980). The author presented experimental data in an original manner, distinguishing eight types of elementary soil–biological processes (decomposition of plant debris, humus formation, humus degradation, mineral formation, mineral degradation, gley formation, ortstein formation, and soil salinization), and she analyzed the role of microorganisms in each of them. Aristovskaya greatly contributed to the development of soil science. She studied and described new bacterial genera and species involved in the conversion of iron and manganese in soil and in the formation of ortstein. It should be noted that one of the new bacterial genera, *Seliberia*, was called by Aristovskaya for her teacher, Seliber. The chapters that present the experimental data obtained by the author herself are read with particular interest.

Aristovskaya developed the microbiological conception of the mechanism of podzol formation and proposed a theoretical model for the microbiological formation of fertile soils. One of her greatest contributions to soil science and general biology is the discovery of a relationship between changes in the Earth's soil cover and the evolution of biocenoses in different geological periods.

Speaking about Aristovskaya's scientific foresight, I cannot but mention her prophetic ideas that soil biology must develop as an ecological science, resting on the concepts and methods of ecological analysis formulated by geobotanists. She initiated the use of some of these methods in soil microbiology. These ideas are now being propagated by researchers at the Department of Soil Biology, the Faculty of Biology, Moscow State University, headed by the leading soil microbiologist D.G. Zvyagintsev. Aristovskaya created her own scientific school of soil scientists, among whom was her son B.V. Gromov, a well-known Russian microbiologist and ecologist, who unfortunately has recently passed away.

It should be noted that Aristovskaya is one of those scientists who receive great emotional satisfaction from everyday routine experimental work, and she has done much of it with her own hands over the whole period of her scientific career. Once, she even had to miss an important scientific meeting in Moscow, as she could not stop the experiment which could provide an answer to the problem of the formation of aluminum sheathes

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around bacterial cells involved in the recycling of this element.

For many years, Aristovskaya gave a soil microbiology course at the Faculty of Geography, Leningrad University, for students specializing in the field of soil science. Under the guidance of Aristovskaya, 13 postgraduates defended their candidate dissertations. In 1972, she was invited to the Agricultural College in Upsala (Sweden) to gave advanced training courses.

Aristovskaya headed the Subsection of Soil Microbiology of the Soviet National Committee and supervised the research work carried out in the scope of the International Biological Project (1968–1974). This project involved the investigation of the dynamics of bacterial populations and their biomass in the soils of different regions and the study of the productivity of these microorganisms under various ecological and geographical conditions. The results of these investigations were presented at the First International Ecological Congress and published in two collections of papers.

Aristovskaya was a member of the Scientific Council for the Problems of Biogeocenology and Nature Protection of the USSR Academy of Sciences and a member of the Scientific Council at the All-Russia Research Institute of Agricultural Microbiology. She participated in a number of national and international scientific meetings, congresses, conferences, and symposia.

Aristovskaya is the author of 117 scientific publications, more than 20 of which were published in the Russian journal *Pochvovedenie* and more than 10 in international journals. She also wrote two monographs, *The Microbiology of Podzolic Soils* (1965) and *The Microbiology of Soil Formation* (1980). Her works are frequently cited and are included in the soil microbiology courses taught at universities.

The colleagues and pupils of Aristovskaya appreciate her professionalism, kindliness, and willingness to share her knowledge with everyone.

Even now in retirement, Aristovskaya keeps in touch with her colleagues, shows interest in soil microbiology, and is writing her memoirs. We wish her health and long life.

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