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In memoriam: Irina V. Tarasevich

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Professor Irina V. Tarasevich died on 11 December 2017; she was 89 years old. Dr Tarasevich was the oldest working rickettsiologist in the world, with broad expertise in the microbiology, epidemiology and ecology of rickettsial diseases. She was a member of the Russian Academy of Medical Sciences (now the Russian Academy of Sciences). Her professional career was associated with the Gamaleya Research Institute of Epidemiology and Microbiology, currently known as the N. F. Gamaleya NRCEM in Moscow, Russia.

Irina V. Tarasevich (Veikshan), born on 16 August 1928, in Moscow, Russia, died on 11 December 2017 at 89 years old. Her father was a historian of pedagogy studying literature and the philosophical legacy of Leo Tolstoy. She graduated with honors from high school in spring 1946, the year when the whole country celebrated the first anniversary of the end of the Great Patriotic War with Nazi Germany. The same year she became a student in biology in Moscow University. Her first exposure to fieldwork occurred during the fourth year of her studies, when she took part in an expedition of the Ivanovskiy Virology Institute to Kalinin (now Tver) region of Russia to study tick encephalitis. This experience laid the groundwork for her diploma work on parasites circulating in an endemic focus in Kalinin. The prominent Russian acarologist Dr A. B. Lange was her first mentor and teacher [1]. Initially, after graduation from the university, she worked for 2 years as a researcher in the Research Institute of Military Medicine and participated in fieldwork on tick encephalitis in the Kemerovo region, one of the endemic areas for this disease in southwestern Siberia.

In August 1953 she joined the Gamaleya Research Institute, starting as a junior research associate. She eventually became the chair of the department of epidemiology and the head of the

Rickettsial Ecology Laboratory in the department of endemic diseases.

Professor Sergey M. Kulagin, known among many contributions for his discovery of North Asian tick typhus in Altai Krai (Western Siberia) and identification of *Dermacentor marginatus* and *D. pictus* as novel vectors for *Rickettsia* during the 1940s [2], was her mentor in rickettsiology. She defended her PhD thesis, entitled '*Hyalomma plumbeum* and *Rhipicephalus bursa* Ticks—Reservoirs and Vectors of *Rickettsia burnetii* (Now *Coxiella burnetii*) in a Q-Fever Focus in Crimea' in 1956 and her advanced doctoral thesis, 'Tsutsugamushi Fever (Etiology and Endemic Foci in Southern Prymorye)' in 1966. Her PhD thesis contained a summary of a multidisciplinary investigation which permitted description of a novel Q fever focus in Crimea, isolation of *C. burnetii* from *Ixodes* ticks and definition of its transmission pathways. Her senior doctoral thesis described pioneering work on discovery of a novel endemic foci of scrub typhus in Russia and isolation and characterization of 35 isolates of *Orientia tsutsugamushi* from mites.

In 1973 Professor Pavel F. Zdrodovskii asked Tarasevich to become the head of a new laboratory for the ecology of rickettsiae intended to conduct in-depth epidemiologic and ecologic investigations on the natural history of rickettsiae and their interactions with arthropods and mammalian hosts. As time went on and new and emerging rickettsial pathogens were discovered, the laboratory expertise was extended to include *Anaplasma*, *Ehrlichia* and *Bartonella* [3,4]. The work conducted by the group led by Dr Tarasevich involved numerous field expeditions, including over 70 trips across the former Soviet Union and the Russian Federation and more than 40 international field expeditions to examine and characterize endemic foci of Q fever, scrub typhus, epidemic typhus, North Asian tick typhus, Far East tick typhus, ehrlichiosis and the novel spotted fever group rickettsiosis, Astrakhan spotted fever. The group provided input on the diagnostic identification of clinical cases, developed new diagnostic assays and most recently worked on development of a Q fever vaccine [5].

Since 1982 Tarasevich served as the chair of the National Center for Rickettsioses in the Soviet Union and Russia and

director of the Regional World Health Organization Center on Rickettsial Diseases. During her tenure she organized five conferences and edited nine proceedings titled 'Rickettsiae and Rickettsial Diseases,' which represented the state-of-the-art work of the Soviet rickettsiologists and their collaborators from Eastern Europe. Tarasevich was a part of the Ministry of Health international teams investigating epidemiologic issues in Afghanistan, Iran and the former Czechoslovakia and worked with groups in Mongolia and Ethiopia. She was viewed as an ambassador of goodwill and was the first Russian rickettsiologist to visit the Rocky Mountain laboratory in Hamilton, Montana, during the Cold War period (Fig. 1). Her international collaborations included partners from Austria, the former Czechoslovakia, France, Germany, Japan and the United States, and she presented at numerous international conferences and symposia. For many years Dr Tarasevich was a member of the Public Health and Medicine Committee of the Pacific Scientific Organization, which became a National Committee of the Pacific Scientific Association in 1993 and is represented by the Russian Academy of Science today.

Dr Tarasevich was elected as a corresponding member of the Russian Academy of Medical Sciences in 1988 and became a full member in 1997; she also served as a deputy secretary for the section on preventive medicine. In 1994 she was elected as a member of the International Academy of Sciences of Eurasia and as a full member of the Russian Academy of the Natural Sciences. For many years Dr Tarasevich was a member of the

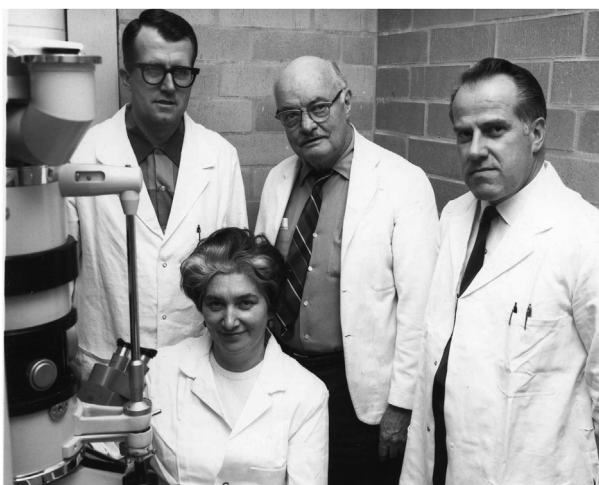


FIG. 1. Irina V. Tarasevich with staff members of Rocky Mountain Laboratory in Hamilton, MT, in 1970 (from Tarasevich's personal archive). Depicted: sitting, Irina V. Tarasevich; standing, left to right, Elias P. Brinton, Cornelius B. Philip and Willy Burgdorfer.

American Society of Rickettsial Diseases and the European rickettsial study group, ESCAR. Her work and contributions to the field were recognized by many awards, of which the most important are Order of Honor (Znak Pocheta), and the medals of I. A. Skryabin and P. Ehrlich. Tarasevich was inducted in the honor list of the Gamaleya Research Institute in 1985, was named a Woman of the Year by the American Biography Institute in 2001 and was elected an honorary member of the American Society for Rickettsiology in 2015.

Dr Tarasevich authored and coauthored over 400 publications, eight monographs and 15 patents. Her best-known books are *Acari-Borne Rickettsiae and Rickettsioses in Eurasia*, published with Dr Josef Řeháček in 1988, and *Astrakhan Spotted Fever*, published in 2002 [6,7]. She mentored many students and fellows, who wrote 32 PhD thesis and doctoral dissertations under her guidance and who continue her legacy.

A new spotted fever group rickettsia, *Candidatus Rickettsia tarasevichiae*, found in the tick *Ixodes persulcatus*, was named in 2003 to honor Dr Irina Tarasevich's lasting contributions to the fields to which she devoted her life, her passion and her scientific talents [8]. She was a remarkably strong-minded and determined person, both physically and intellectually, and she was a role model for women in science. She kept a daily journal of her experiences for most of her life; her last unfinished project was intended to tell a photographic history of rickettsiology. She is survived by her daughter, two granddaughters and a great-grandson.

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