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120th Anniversary of the Birth of Gavriil Sergeyevich Strelin, Corresponding Member of the USSR Academy of Medical Sciences

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ABSTRACT

April 8, 2025, will mark the 120th anniversary of the birth of Gavriil Sergeyevich Strelin, a major scientist and educator. The authors have summarized the facts of the scientist's biography and the main stages of his scientific and pedagogical activity. The main scientific work of G.S. Strelin was centered around the issues of radiobiology and the study of cell division regulation. G.S. Strelin worked for many years at the Central Research X-ray Radiological Institute in Leningrad. Gavriil Sergeevich was an honorary member of the All-Union Scientific Society of Rentgenologists and Radiologists and Deputy Chairman of the Problem Commission on Radiobiology of the USSR Academy of Medical Sciences. 15 theses were defended and about 200 scientific papers were published under his supervision. During the period from 1952 to 1960, G.S. Strelin headed the Department of Histology and Embryology of the First Leningrad Medical Institute, took an active part in the development of new methods of teaching histology as an academic discipline, attracted a number of new staff members to work at the department. The life and creative path of Gavriil Sergeyevich Strelin has served as an example for the younger generations of doctors, scientists and teachers for many years.

Keywords: Gavriil Sergeyevich Strelin; histology; embryology; radiobiology.

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120 лет член-корреспонденту Академии медицинских наук СССР Гавриилу Сергеевичу Стрелину

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АННОТАЦИЯ

8 апреля 2025 года исполняется 120 лет со дня рождения крупного учёного и педагога — Гавриила Сергеевича Стрелина. Авторы обобщили факты биографии учёного и основные этапы его научной и педагогической деятельности. Основная научная деятельность Г.С. Стрелина была связана с вопросами радиобиологии и изучением регуляции клеточного деления. Г.С. Стрелин в течение многих лет работал в Центральном научно-исследовательском рентгенорадиологическом институте в Ленинграде. Гавриил Сергеевич был почётным членом Всесоюзного научного общества рентгенологов и радиологов и заместителем председателя проблемной комиссии по радиобиологии Академии медицинских наук СССР. Под его руководством защищено 15 диссертаций и опубликовано около 200 научных работ. В период с 1952 по 1960 год Г.С. Стрелин заведовал кафедрой гистологии и эмбриологии Первого Ленинградского медицинского института, принимал активное участие в разработке новых методик преподавания гистологии как учебной дисциплины, привлёк к работе на кафедре ряд новых сотрудников. Жизненный и творческий путь Гавриила Сергеевича Стрелина уже многие годы служит примером для подрастающих поколений врачей, учёных и педагогов.

Ключевые слова: Гавриил Сергеевич Стрелин; гистология; эмбриология; радиобиология.

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苏联医学科学院记者成员•Gavriil Sergeyevich Strelin诞辰120周年

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摘要

2025年4月8日是著名科学家和教育家Gavriil Sergeyevich Strelin诞辰120周年纪念日。作者总结了这位科学家的生平事迹及其科学和教学活动的主要阶段。Gavriil Strelin 的主要科学活动与放射生物学和细胞分裂调节的研究有关。Gavriil Strelin 曾在列宁格勒中央伦琴射线科学研究所工作多年。Gavriil Strelin是全苏伦琴射线学家和放射学家科学协会的荣誉会员,也是苏联医学科学院放射生物学问题委员会的副主席。在他的领导下,通过了15项论文答辩,发表了约200篇科学论文。自1952年至1960年期间, Gavriil Strelin担任列宁格勒第一医学院组织学和胚胎学系主任,积极参与制定组织学作为一门学科的新教学方法,并吸引了一批新员工到该系工作。多年来, Gavriil Strelin的生活和创作道路已经成为年轻一代医生、科学家和教师的榜样。

关键词: Gavriil Sergeyevich Strelin; 组织学; 胚胎学; 放射生物学。

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April 8, 2025, will mark the 120th anniversary of Gavriil S. Strelin, a major scientist and educator. His name is inextricably associated with the I.P. Pavlov First St. Petersburg State Medical University and particularly with the Department of Histology, Embryology, and Cytology. Looking into professional activities of Gavriil S. Strelin, we can understand the challenges and contradictions of the era in which the leading Soviet and global scientists had to work. Let us look into the early life of Gavriil S. Strelin.

Gavriil S. Strelin was born in Kharkiv on April 8, 1905. His family belonged to the intelligentsia. His father, Sergey Lvovich Strelin, a native of Bakhmut (now Artemivsk), taught at women's higher courses in Kharkiv. His mother, Maria Alexandrovna, a native of Kharkiv, managed the household and raised two children: Gavriil and his sister Alexandra, who was two years older. Between 1910 and 1914, the family lived in Bern (Switzerland), where his father pursued further education and did some scientific work. Later, the family moved to Simferopol. Since 1936, Sergey Lvovich Strelin was a professor at the M.I. Kalinin Crimean Agricultural Institute. Gavriil S. Strelin's parents died at an old age in Samarkand, where they were evacuated.¹

Gavriil S. Strelin finished school and a general education technical college in Simferopol. All records indicate that he was not a member of the All-Union Leninist Young Communist League of the Soviet Union or the All-Union Communist Party (Bolsheviks), which, contrary to a popular belief, did not prevent him from pursuing a scientific career. In 1922, he was enrolled in the Department of Biology of the Faculty of Physics and Mathematics at the M.V. Frunze Crimean University, majoring in zoology and comparative anatomy, which he graduated in 1925 [1]. From 1926 to 1930, Gavriil S. Strelin completed five-year postgraduate training in the Laboratory of Experimental Biology and Histology at the X-ray Radiological Institute in Leningrad. This postgraduate training later shaped Gavriil S. Strelin's scientific interests. After completing postgraduate training, he continued to work in the same laboratory under Professor A.A. Zavarzin. In 1932, by Decree of the Council of People's Commissars of the USSR dated October 15, 1932, the State Institute of Experimental Medicine was reorganized into the All-Union Institute of Experimental Medicine. Professor A.A. Zavarzin, who was appointed the Head of the Department of General and Comparative Morphology at the All-Union Institute of Experimental Medicine, brought several colleagues from the Radiological Institute, including Gavriil Sergeyevich Strelin [2]. The scientific work of Gavriil S. Strelin was primarily experimental and related to the study of radiological effects on biological objects. Between 1924 and 1935, 14 scientific papers by Gavriil S. Strelin were published in both Soviet and foreign journals. In 1935, Gavriil S. Strelin was awarded the degree of Candidate of Biological Sciences without a formal



Fig. 1. Gavriil Sergeyevich Strelin, Corresponding Member of the USSR Academy of Medical Sciences (1905–1992). (Photo of G.S. Strelin from the photo archive of the Department of Histology, Embryology and Cytology of Pavlov University).

defense, based on the totality of his scientific work (this procedure existed for a long time in the USSR).

In 1929, being a postgraduate trainee, Gavriil S. Strelin was appointed a third-rank junior lecturer at the Department of Histology and Embryology of the S.M. Kirov Military Medical Academy, and in 1937 he was promoted to associate professor at the same department [3]. In 1940, he was awarded the academic title of associate professor.

Gavriil S. Strelin was broadly educated. In his autobiography, he wrote that he was fluent in German, English, and had a slightly worse command of French.¹ His wife, Alevtina Vladimirovna Menshikova (Strelina after marriage), was his colleague, an assistant at the Department of the Leningrad Dental Institute. The couple had 2 sons: Stanislav (born in 1940) and Andrei (born in 1948).¹

In 1942, during the Great Patriotic War, Gavriil S. Strelin was evacuated with his family to Samarkand. There, he headed the Department of Experimental Morphology at the Center for Roentgenology, Radiology, and Oncology of the USSR Ministry of Health,¹ which had also been relocated to Samarkand and is now known as the A.M. Granov Russian Research Center for Radiology and Surgical Technologies.

¹ Personal file of G.S. Strelin N 73. Archives of I.P. Pavlov First St. Petersburg State Medical University. (In Russ.)

In 1944, Gavriil S. Strelin returned to Leningrad and worked for a year at the First Leningrad Medical Institute. He defended his doctoral dissertation, titled *On the Nature of Child's Gradients and Their Role in the Dynamics of Organism Development*, at the Academic Council of the S.M. Kirov Military Medical Academy [4]. His professor's certificate was issued on April 21, 1945.¹ On March 10, 1946, the Higher Attestation Commission awarded him the degree of Doctor of Biological Sciences. By that time, Gavriil S. Strelin had already published 40 papers.

In 1948, Gavriil S. Strelin returned to the Department of Histology and Embryology of the First Leningrad Medical Institute as a professor, and in 1952, he was appointed the Head of the Department [5]. Gavriil S. Strelin renewed the scientific focus of the department's work. He paid particular attention to studying the mechanisms of the biological effects of ionizing radiation. During this period, several new staff members worked actively in the department, some of whom (A.L. Polenov, A.A. Zavarzin Jr., A.K. Ryabuha, V.V. Kozlov) later became professors and corresponding members and worked at various research and educational institutions [6].

From 1942 to 1978, Gavriil S. Strelin combined his work at the department with heading the Laboratory of Experimental Histology at the Central Research X-ray Radiological Institute. Since 1963, Gavriil S. Strelin served as Deputy Director for Science at this institute and was also a member of the Scientific Councils of the First Leningrad Medical Institute and the Central Research X-ray Radiological Institute [1].

Gavriil S. Strelin was awarded the Medal for Valorous Labor in the Great Patriotic War (1946), the Excellence in Health Care badge (1950), and the Order of the Red Banner of Labor (1951).¹

In 1954, Gavriil S. Strelin traveled as part of a delegation from the USSR Ministry of Health to Rome (Italy), where he participated in a radiologists' conference, an event which was quite rare at that time. In 1958, Gavriil S. Strelin served for six months as scientific secretary of the International Geneva Conference on the Peaceful Use of Atomic Energy and worked with the United Nations in New York and Geneva. During this period, he published the following works: *On Certain Regularities of the Biological Effects of Ionizing Radiation* (Medical Radiology, 1956); *The Role of Vitamin C in the Mechanism of Reactive Inhibition of Cell Division During Pain Stimulation in Animals* (Proceedings of the Academy of Sciences, 1956); and *On the Issue of Neurohumoral Influences on Cell Division Processes* (Archives of Anatomy, Histology, and Embryology, 1958) [7]. Histology as an academic discipline was studied by students of the First Leningrad Medical Institute during the second and third semesters, with three-hour practical sessions held in the spring semester and four-hour sessions in the autumn semester. After the August session of the V.I. Lenin

All-Union Academy of Agricultural Sciences (1948), the ideas of T.D. Lysenko and O.B. Lepeshinskaya were incorporated into textbooks, including *Histology Manual* by A.A. Zavarzin and S.I. Shchelkunov, which was published in 1954, after A.A. Zavarzin's death. From 1955, scientific journals started publishing articles refuting the theories of O.B. Lepeshinskaya and T.D. Lysenko, notably by L.N. Zhinkin and V.P. Mikhailov [8]. Due to criticism of T.D. Lysenko's theories, under the guidance of Professor Gavriil S. Strelin, the teaching strategy at the department was redirected toward lecture material, as existing textbooks did not accurately reflect the current state of science. In addition to basic lectures, supplementary lectures on embryology were given. Educational films were shown during the lectures. In 1956–1957, the curricula were revised, and changes were introduced to teaching methods. Student recitations were discontinued; the faculty members acted as consultants, and students mostly studied independently using methodological guidelines. These innovations led to a sharp decline in students' knowledge levels, resulting in a gradual return to the previous system of education [4]. In 1959, the Faculty of Dentistry was opened at the I.P. Pavlov First Leningrad Medical Institute, and the faculty began developing a specialized section of the histology course [9]. In 1960, Professor Gavriil S. Strelin decided to resign as the Head of the Department and focus on work at the Radiological Institute.

In this period, he published several of his leading works, including: *On the Issue of Neurohumoral Effects on the Processes of Cellular Reproduction* (Archives of Anatomy, Histology, and Embryology, 1959); *Autotransplantation of Bone Marrow Cells in Experimental Radiation Sickness* (Radiobiology, 1962); *On the Possibility of Therapeutic Use of Bone Marrow Autotransplantation in Nonuniform Radiation Exposure* (Problems of Hematology and Blood Transfusion, 1966), as well as the monograph *Regenerative Processes in the Development and Resolution of Radiation Injury* (1978). Under Gavriil S. Strelin's supervision, 15 dissertations were defended and about 200 scientific papers published, including two monographs. Gavriil S. Strelin was an honorary member of the All-Union Scientific Society of Rentgenologists and Radiologists and Deputy Chairman of the Problem Commission on Radiobiology of the USSR Academy of Medical Sciences [6].

Gavriil S. Strelin passed away in Moscow on July 19, 1992.

CONCLUSION

The life and creative path of Gavriil S. Strelin has served as an example for the younger generations of doctors, scientists and teachers for many years, inspiring pride and a sense of connection to the history of Russian

¹ Personal file of G.S. Strelin N 73. Archives of I.P. Pavlov First St. Petersburg State Medical University. (In Russ.)

morphology. Therefore, preserving the memory of the accomplishments of this gifted morphologist remains relevant to this day.

ADDITIONAL INFORMATION

Author contributions: Tatyana V. Pavlova developed the concept, wrote the manuscript, selected literature sources; Irina V. Leontyeva wrote the manuscript, selected literature sources; Yuliya S. Zagarskaya searched for and worked with archival documents; Olga A. Leontyeva selected literature sources. All authors approved the manuscript (version for publication) and agreed to take responsibility for all aspects of the work, ensuring that any issues related to accuracy or integrity will be appropriately addressed and resolved.

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