

Pages from the biography of Professor L.Z. Morokhovets (1848–1919)

Mikhail A. Morokhovets

Abstract. The article tells us about the life of Professor L.Z. Morokhovets, whose work was closely connected with the Faculty of Medicine of Moscow University in the late 19th and early 20th centuries. Morokhovets' professional activities were devoted to the service of Russian medicine. To promote Russian science abroad, he founded the *Journal of Physiology*, which was published in German and French. A significant part of Morokhovets' scientific and educational activities took place in close collaboration with I.M. Sechenov. As a result, the merits of Morokhovets' contributions in the development of medical science, medical education and Russian social thought were forgotten, having been overshadowed by Sechenov. Morokhovets was the author of works on the physiology and biochemistry of digestion, and the founder and organizer of the Physiological Institute's new building at Moscow University, which he equipped with the most advanced facilities for its time. He was the founder of the Museum of Medicine at Moscow University and the author of Russia's first fundamental guide to the history of medicine. In 1901, Morokhovets proposed to delegate the university's medical faculty as an independent institution and reasoned his idea. The moral and ethical aspects of doctors' work were relevant for Morokhovets. He assigned a special place to the role of the physician in society.

On the basis of archival material, the author managed to establish new facts from Morokhovets' biography. It has been demonstrated that the construction of a scientific station on Crimea's Kara-Dag was a result of the joint activity of two scientists – T.I. Vyazemsky and Morokhovets. Previously it was thought that Morokhovets only provided financial support for its construction. In addition, information has been given about the circumstances of Morokhovets' resignation from the post of head of the department of physiology at Moscow University, and the date of scientist's death has been verified.

Keywords: L.Z. Morokhovets, physiology, history of medicine, medical ethics

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Professor Lev Zakharyevich (Zakharovich) Morokhovets' name is rarely found in literature. At the end of the 19th century, an article about the Russian scientist appeared in the Brockhaus and Efron encyclopedia [1]. Then his name disappeared from encyclopedias and reference books for decades. In Soviet times, he was mentioned for the first time in 1946 by academic Kh.S. Koshtoyants: "...during the time of Sechenov's arrival in Moscow, Sheremetyevsky's closest assistant was L.Z. Morokhovets, together they established the teaching and research work of the department [of physiology at Moscow University – *M. Morokhovets*]" [2, p. 334]. A textbook on the history of medicine published in 1954 said Morokhovets "slandered domestic medicine and asserted the superiority of Western medical science, in his course of lectures "History and the relation of medical knowledge" (1903) he considered it necessary to include a huge number of the leading names in medicine, including

minor mention, moreover, in passing, of no more than ten Russian scientists" [3, p. 22]. In 1961, an article about Morokhovets appeared in the Great Medical Encyclopedia (GME) [4], in which it was stated that in his works "...the merits of domestic medicine was downplayed". Thus, charges of cosmopolitanism against Morokhovets were entrenched. The third edition of GME does not include the article containing charges of cosmopolitanism against Morokhovets [5, p. 485]: the author wrote that Morokhovets published a magazine, "Le physiologiste russe", in French and German to familiarize the scientific world with the successes of Russian science. In the 2000s, several encyclopedia articles about Morokhovets were published [6; 7, p. 382]. In his research, Professor M.K. Kuzmin called him the founder of the first scientific school of historians of medicine in Russia [10]. In those same years, Professor V.A. Makarov, who highly valued Morokhovets' activities, published two papers containing a lot of information about the scientist [8, 9].

This article is an attempt to eliminate the inaccuracies in Morokhovets' biography and

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supplement it with information about his life and social activities.

Morokhovets was born on June 27, 1848, in Erivan (present-day Yerevan) to the family of town governor Zakhariya Lvovich Morokhovets, who, like his wife, Kapitolina Alekseevna (née Velichko), was a native of Malorossiia. The Morokhovets family came from a line of Zaporozhian Cossacks. Lev Zakharovich's great-grandfather, Ivan Karpovich Morokhovets, held the rank of centesimal ataman of the Poltava Zaporozhskiy regiment and participated in the siege of Poltava (1709), and his great-grandfather, Grigory Morokhovets, was regimental *esaul* (commander's deputy) at the same regiment and participated in the Turkish campaign.¹

From 1860 to 1867, Lev Morokhovets stayed in the Tiflis classical gymnasium guesthouse under state care.² After high school, he enrolled at the Saint Petersburg Practical Technological Institute in the mechanical department on a Caucasian scholarship and studied for a year, then transferred to the Saint Petersburg Medical-Surgical Academy, where he attended lectures from September 1868 to December 1869. According to his autobiography, "due to a damaged constitution, he left the academy in his second year".³

In 1872, L.Z. Morokhovets enrolled at the University of Heidelberg, from which he graduated with a Doctor of Medicine degree (in February 1876, he defended his thesis "Über die chemische Zusammensetzung der Cornea")⁴ In the same year, Morokhovets was appointed assistant professor at the physiological institute of Professor Wilhelm Kühne in Heidelberg, where he remained until the end of 1877.

Morokhovets returned to Russia in 1878. According to his autobiography, until 1880 he was carrying out research in Russia on the physiology and biochemistry of digestion at the Imperial Moscow University (IMU), led by Professor A.D. Bulygin, A.I. Babukhin and F.P. Sheremetev. The main object of his research

was the biochemical conversion of protein. During this period he produced such works as "On the identity of nuclein, mucin and amyloid substances" (1878), "Digestion as a chemical method", "Elastin and its derivatives", "Recent studies of the anatomical and chemical structure of nerve fibers" (1879) and wrote a thesis on "The laws of digestion" (1880), which he prepared to defend at the Imperial Medico-Surgical Academy (IMSA) in order to receive the degree of Doctor of Medicine in Russia. A positive decision was issued by IMSA professors I.R. Tarkhanov, N.A. Sokolov and A.P. Borodin. On May 11, 1881, Morokhovets defended his thesis at IMSA⁵ and was awarded the title of doctor of medicine. A condition for studying at the educational institute was serving in the army, so in January 1881, Morokhovets became the youngest doctor of the 2nd Sofia infantry regiment [13]. However, his plans did not include long-term military service. In February 1882, Morokhovets began to teach physiology of animals at the Petrovsky Academy of Agriculture and Forestry, and on March 20, 1882, he was bestowed the rank of "assistant professor for the subject of physiology" by the IMU council. For almost three years he combined military service and work at the department of physiology at the IMU. It was only on January 30, 1885, that he was dismissed from the Military Medical Office on the occasion of his move to the position of anatomist at the department of physiology.⁶

Morokhovets received his positions at the IMU and the Petrovsky Academy, with the support of outstanding histologist, physiologist and embryologist Professor Alexander Ivanovich Babukhin (1835-1891). In a letter to the director of the Petrovsky Academy, F.K. Arnold⁷ on January 25, 1882, Babukhin wrote: "My former assistant doctor Morokhovets came the other day from Saint Petersburg, I can safely recommend him as an expert in physiology and a skillful experimenter ...Morokhovets' name enjoys

¹ About the Morokhovets nobility. Russian State Historical Archives (RSHA), f. 1343, op. 25, d. 5801.

² Z. L. Morokhovets died in 1857 at the age of 46, and his wife raised their four young children – three sons and a daughter.

³ Medical-Surgical Academy. About Lev Morokhovets' doctoral exam. RSHA, f. 316, op. 43, d. 1205, n. 88.

⁴ "On the chemical composition of the cornea".

⁵ In 1881, the IMSA was renamed to the Imperial Military Medical Academy (IMMA).

⁶ Central State Archives (CSA) of Moscow until 1917, F.418, inventory 487, the case 268. Formulary service list for L.Z. Morokhovets.

⁷ Fyodor Karlovich Arnold (1819–1902) – a Russian scientist-arboriculturist, the founder of the Russian school of forest management, "grandfather of the Russian forestry".

distinction among professionals and is cited in textbooks of physiology”.⁸

On February 13, 1882, Morokhovets read his first trial lecture on the physiology of animals at the Petrovsky Academy, which was attended by all the professorial staff, after which he was appointed assistant, and in February 1885 he was elected to the post of assistant professor in the department of animal physiology.

From February 1882, Morokhovets started to read a course of lectures at the IMD on physiology divisions, nutrition and metabolism, and continued research on the physiology and biochemistry of digestion. He found that the end product from the action of pepsin gastric juice on proteins was peptones that were already decomposed into amino acids in the duodenum. It was on this subject that he dedicated his articles “Amyloid degeneration in connection with the nuclein concept”, “Digestion is a chemical method”, “Integration of proteins in animal bodies” (1887), “The integration of protein bodies” (1892) and a number of publications in the journal Proceedings of the Physiological Laboratory of Imperial Moscow University.⁹ In the book *The Integration of Protein Bodies*, Morokhovets outlined the history of the study of proteins and suggested the integration of globulin and albumin [11]. The subject of his further studies became the physiology of the vocal apparatus. Based on the study of the physiology of speech, he proposed a new universal phonetic alphabet applicable to all languages [12].

Morokhovets achieved outstanding success in the organization of scientific work. In 1882, F.P. Sheremetev commissioned him to administer the physiological laboratory of IMU, which at that time was in a deplorable state, and Morokhovets turned it into a well-equipped physiological institute.

In 1893, a collection of articles on physiology, dedicated to L.Z. Morokhovets [13] was published, the introduction stating: “Looking at the history of the laboratory, it is easy to conclude that its more or less continuous operation began in 1882, when

Prof. F.P. Sheremetev charged the administrator of the laboratory to L.Z. Morokhovets, who actively engaged in equipping the laboratories for physiological studies, as a result the number of doctors and students working here increased significantly ...L.Z. Morokhovets’ name is closely related both to the activities of the old laboratory and with the equipping of the new building of the institute, where, starting with the layout of the rooms and ending with almost the final nail, everything was done under his personal supervision and his plans and drawings ...The dedication of this collection to the energetic laboratory organizer and the selfless devotion to it by its head is an expression of only a fraction of the appreciation that he deserves from everyone – from those working in the laboratory, and those who have [an intention] to work in it.”

V.N. Popov, author of the first article published in this volume, summarized the circumstances of the creation of the Physiological Institute: “He [L.Z. Morokhovets – *M. Morokhovets*] ...brought over and sacrificed his own chemical laboratory, and at first, he gave purely laboratory equipment ...thanks to the initiative of L.Z. Morokhovets, Prof. F.P. Sheremetev came with a request ...for the remission of funds for fitting out the laboratory with required equipment for special classes. All the works were done according to L.Z. Morokhovets’ plans and drawings and under his personal supervision. The library office, which grew due to increased donations from Lev Zakharovich [Morokhovets] and others, was put in order...” [13, p. 8].

In the summer of 1886, Morokhovets was sent abroad by IMU to participate in the celebration of the 500th anniversary of the University of Heidelberg and become familiar with the physiological laboratories of Western Europe. Morokhovets visited the laboratories of many universities in Europe. The results were presented to them in a memo addressed to the trustee of the Moscow school district. In it, Morokhovets formulated the requirements for a new physiological institute: “Physiology, crowning a whole cycle of sciences for the first two years of medical education, naturally includes three areas: anatomy, physics and chemistry, one of which is often characterized by the scientific field of one or another department” [14, p. 172]. The new building of the Physiological Institute

⁸ Central State Archive in Moscow until 1917, fund 228, op. 2, d. 152.

⁹ The journal of Proceedings of the Physiological Laboratory of Imperial Moscow University was founded in 1888. Its editor was Morokhovets.

was constructed according to plans developed by the commission, which included architect M.K. Bykovsky, Professor A.I. Babukhin and Sheremetev, anatomist Morokhovets and Popov. The opening took place on October 10, 1893. From that point onwards began a new phase for the physiological laboratory and the department of physiology. The institute's new building had twenty rooms. "Within each were all the necessary facilities and recent improvements for training; gas, electricity and high and medium pressure water were available throughout. All the interior fitting out was carried out under the direct supervision of Morokhovets, who put a lot of work, knowledge and experience into the creation of the entire set up at the proper level" [14, p. 176].

The laboratories' technical equipment was the subject of Morokhovets' special attention. This demonstrated his youthful enthusiasm for the engineering disciplines. The journal "Proceedings of the Physiological Laboratory at Imperial Moscow University" published several of his articles about the new devices and tools for physiological practice, and a report was made on this subject at the Eighth Pirogov Congress (January 5, 1902). Among the technical innovations that Morokhovets created for equipping laboratories was an improved A. Schmidt dual mercury pump, a photographic apparatus for laboratory purposes, and a new universal myograph, in which muscles and nerves were not dried out in long-term experiments. Morokhovets constructed a device that he called a pantoscope, which allowed for various figures and objects ranging in size from 10 cm in diameter to microscopic to be displayed in an enlarged size during lectures. The device was a simple apparatus, which provided for its general use during lectures [15].

One of Morokhovets' hobbies was photography. He gave a few lectures at the department on the art of color photography, attended lectures at the congress of photographers, published several articles on photography, in particular on the merits of artistic photography as a method of knowing the world [16]. L.N. Tolstoy was in the audience at one of his lectures on photography techniques at the Physiological Institute. Morokhovets' encyclopedic knowledge and his practice of creating new instruments for research formed the basis of his extensive work

on the physical and chemical basics of research methods in medicine and biology [17].

In 1891, after the death of Professor Sheremetyevsky, I.M. Sechenov was invited to head the department of physiology. The following is what Sechenov wrote in his "Autobiographical Notes" about working with Morokhovets: "The knowledge that in this place I can be of more good to the medical faculty than as a private associate professor without a working corner made me accept the offer, and in the ensuing decade of professorship (1891-1901) there was no reason to regret this decision: my comrades in the medical faculty welcomed me with open arms; in the laboratory, I have found such a friendly fellow in the form of my closest collaborator Lev Zakharovich Morokhovets, that for ten years, I have never felt like a stranger in a strange place ...When I was made the chair of physiology, L.Z. Morokhovets, according to a new statute, was an anatomist – my first act was to procure him the title of extraordinary professor. After that it was easy to amicably divide our work in the department as two equal members. He had a large talent for management, and I am lacking in this; the management of the institute was therefore granted to him, especially since he was the organizer of the Physiological Institute; as I am the more experienced lecturer, I was granted a larger number of lectures (four hours for me a week, he received two) ...Lev Zakharovich [Morokhovets'] tact and friendliness I owe to the fact that, having quietly lived in these rooms for a decade of professorship, I live in them quietly now that I am retiring ...I was able to work under conditions that were fatigue-free and restful while already being in retirement and using my previous facilities at the laboratory, thanks to the truly friendly to me aforesaid director L.Z. Morokhovets" [18, p. 182, 183, 193].

In 1901, due to his old age, Sechenov submitted to IMU rector a request to be dismissed from service at the university, and Morokhovets was appointed head of the department of physiology. Note that within three years before that, on April 30, 1898, Sechenov asked the leadership of the Faculty of Medicine at IMU to release him "from the title of head of the (physiological) institution, presenting the aforesaid Professor Morokhovets" [19, p. 151]. After the death of Sechenov in 1905, IMU council decided to publish his complete

works at the expense of the university. “The editing of this publication,” was assigned to a “commission especially chosen for the task,” which included professors M.A. Menzbir and Morokhovets and assistant professor M.N. Shaternikov.

One of Morokhovets’ most important activities was to create a history course and encyclopedia of medicine at Moscow University.¹⁰ In 1895, the faculty of medicine council requested that Morokhovets be assigned to the teaching of the history of medicine in combination with teaching a physiology course. Morokhovets enthusiastically held “lecture-discussions,” as he called them, on the history of medicine for the students. Based on his reading of the lecture course on the history and encyclopedia of medicine, Morokhovets published a textbook titled *Encyclopedia of Medicine* [20]. In the preface to it he wrote: “Outlining the aims and objectives of this and that medical science, an encyclopedia is scientific propedeutic – in this it meets its purpose – it serves as an introduction to the science that you study. But beyond that, the encyclopedia has a second, most important task – to show the mutual relation of all medical sciences and present medical science, as one harmonious system” [20, p. 1].

The final results of Morokhovets’ work on the history of medicine was his landmark work – “*History and the Relation of Medical Knowledge*” [21]. In the introduction to this book, the author lists all the well-known monographs and other works on the history of medicine, including in Russian (S.G. Kovner, H. Gezer, M.A. Belin, G.G. Skorichenko-Ambodik and others) and then writes: “All of them are reference books rather than guides to the elucidation of the idea of development of medicine in general. Almost all of the guides to the history of medicine are a string of biographies of prominent doctors. ...We have taken another approach. We were interested, first of all, in the consistent development of medical knowledge and medical ideas and furthermore historical figures have been presented to us only

as milestones over the course of time” [21, p. 7]. In this was all that distinguished Morokhovets’ novel approach. For a visual representation of the location of various medical sciences in the system of medical knowledge, Morokhovets depicted a “tree of medical science”. Further, the author presents the history of the development of morphology (here it includes anatomy and histology), phenomenology (phenomenology of healthy people and the phenomenology of sick people), healing (including mechanical, medical, dietetics and hygiene and unscientific healing). The fourth and last section is called “The doctor and his social position”.

Not all sections of the book are equal in the completeness of the material they present. It seems that the most complete and well-written section, “Phenomenology”, presents the most important philosophical ideas, great discoveries in natural science, which laid the foundation for the explanation of many natural phenomena. Morokhovets’ main idea is the unity of medicine and the natural sciences: “History shows us examples where a physiologist or a doctor is so imbued with the awareness of the great importance of physics and chemistry, that they gave themselves over entirely to the service of this science ...The results of medics’ interest in these fundamental sciences were extreme: chemistry owes its success entirely to doctors, starting with Stal and ending Berzelius and Wohler. The same can be said of physics...” [21, p. 81]. Morokhovets emphasized the special role of Johann Muller in the history of physiology: “The emergence of J. Muller should be considered an epoch in the history of human phenomenology ...Continuing the work of Luther and Kant, with his example and teachings, J. Muller freed the scientist’s conscience from oppressive confusion, having strictly separated the business of faith from the business of science!” [21, p. 86]. The author placed a particular focus on ethics of the medical profession: “The profession of doctor cannot be compared to any other profession because ...the doctor, looking to very tangible benefits, speculates on what citizens value the most of all ...their health and life!” [21, p. 380].

“*History and the Relation of Medical Knowledge*” differs in the simplicity of the presentation of materials, sufficiently rigorous systematization and the huge number of scientists

¹⁰ The department of history and encyclopedia of medicine was established at Moscow University under the “General Statutes for Russian universities” in 1884. From December 1885, the reading of lectures was charged to the anatomist at the department of forensic medicine Doctor M.A. Belin (1842-1896), who in 1889 published a textbook for students – “*Notes on the History of Medicine*”.

named, but this work is not without its deficiencies. For example, there is a very sparing description of the history of the struggle against infectious diseases (reduced only to the experience of the use of preventive vaccination), and little attention is paid to domestic medicine (in particular, there is no description of *zemstvo* medicine, which was such an important phenomena for Russia in the 19th century). Morokhovets wrote rather sparingly about representatives of Russian medicine. Among Russian anatomists, he mentioned only Moscow Professor J.C. Loder¹¹ and Professor V.L. Gruber¹² from Saint Petersburg Imperial Medical-Surgical Academy [21, p. 17–18]. Only a small paragraph was dedicated to Russian physiologists: “The work of Karl Ludwig (1816–95) in Leipzig and his numerous students, among whom many are Russian – Shchelkov, Sheremetevky, Sechenov, Voroshilov, Tsion and others – extensively and genuinely studied blood flows and secretions, gases, blood pressure and more. Among Russian scholars, the work of Ivan Mikhailovich Sechenov (born 1829) was especially outstanding – major work on the absorption of carbon dioxide in the blood, followed by his work on the mechanism of spinal phenomena and more. E. Tsion (born 1843) together with Ludwig discovered ‘nervus depressor’ in rabbits, etc.” [21, p. 92]. He does not even mention Sechenov’s famous work “Reflexes of the Brain”, and speaks very skeptically of I.I. Mechnikov: “Mechnikov’s doctrine of phagocytosis ...did not survive its author” [21, p. 170]. Morokhovets was wrong in his prediction for the phagocytosis doctrine’s fate, which Mechnikov laid out in 1883. He approached Mechnikov’s other works with incredulity: “...A well-known zoologist, Mechnikov thinks specific sera fight old age, armed primarily against the phagocytes devouring our aging tissue” [21, p. 276]. Russian surgery was allocated a few lines: “Among Russian surgeons special attention was paid to Yuly Shimanovsky (1829–63), a professor in Kiev, and Nikolai Ivanovich Pirogov (1810–81), known not only for his skill and surgery on the foot but also for his wonderful atlas of topographic anatomy” [21, p. 206]. However, when we talk about

¹¹ Justus Christian Loder (1753–1832) was an anatomist and from 1806 – a surgeon in ordinary to Emperor Alexander I.

¹² Wenceslas Leopoldovich Gruber (1814–1890) was professor of the Saint Petersburg Military Medical Academy.

Morokhovets’ “History and the Relation of Medical Knowledge”, it should be noted that it was Russia’s first fundamental guide to the history of medicine in which an attempt was made to summarize the experience of worldwide medicine and indicate the discipline’s most important research sources.

Morokhovets deserves much credit as the initiator and creator of Russia’s first museum of the history of medicine in 1899. He wrote that in the course of reading the history of medicine he noted that it lacked illustrations. “And to solve this there was a pressing need for a museum that aims to collect and store the written and physical monuments (machines, tools, medical appliances), drugs that have historical significance, as well as serve the purposes of teaching and collecting material for the development of the country’s history of medicine and material for the study of folk medicines of our country” [21, p. 8].

Questions of medical ethics prompted Morokhovets to make a passionate critique of V.V. Veresaev’s book “Notes of a Doctor” [22], which very cleverly created the image of a not too educated doctor disillusioned by the imperfection of medicine and brought to the public’s attention the ethical problems of medicine, the inner world of the doctor and unsightly cases of medical practice. Veresaev was condemned by many well-known doctors at the time (surgeon-academic N.A. Velyaminov, psychiatrists I.A. Sikorsky and A.S. Shklyarevsky, N.V. Farmakovsky, M.L. Kheysin and others). Meanwhile, the general public reacted to the author of “Notes of a Doctor” with exceptional warmth and deep sympathy. Tribute should be paid to Morokhovets’ honesty: He contributed a large selection of both negative and positive comments on Veresaev’s book. However, citing in his pamphlet numerous examples of unprofessionalism and helplessness of Veresaev’s hero, Morokhovets often associated the image of the doctor, who has badly assimilated what was taught at university, with the author, which, of course, is unfair. Also do not forget that faculty of medicine graduates to some extent at the beginning of their professional careers feel they lack knowledge and practical skills.

Morokhovets took on the defense of the medical class, the vast majority of whom carry out their work in good faith. Arguing against the hero of “Notes” about the imperfections of medicine, he wrote:

“However limited medicine in, we have to help, as doctors over the ages have always done, and not wait until medicine develops” [22, p. 13]. With indignation, he speaks of episodes describing cases of doctors refusing visits to patients whose relatives could not pay for their visit [22, p. 48]. Morokhovets was too categorical in his criticism of Veresaev for excessive dramatic storytelling, exaggeration, the hero’s hysterics in assessing certain events, and on this basis, considers Veresaev’s book harmful to the general public and young doctors.

Morokhovets took on a student, M.Yu. Lakhtin (1869–1932), who became his closest assistant in the creation of the museum of the history of medicine. In addition, under his leadership and with his assistance the following works were produced at the department on the history of medicine: “Medicine and surgery in the 19th century” (V.N. Razumovsky, 1902), “A.I. Pol – the first professor of the surgical hospital clinic of Moscow University” (A.V. Martynov, 1909).

In addition to scientific and educational activities, Morokhovets took on major social and organizational work. He was a member of many scientific societies and was an active figure in them. From 1878, he was a member of the Moscow Society of Medicine. In 1883, he was elected a full member of the Physical-Medical Society at Moscow University, and in October of the same year, he became its secretary. In 1885, he was elected a member of the Psychological Society at Moscow University. In August 1897, he participated in the 12th International Congress of Doctors in Moscow (in connection with this, the French Government granted him the Order of Academic Palms award). In 1898, he created a department of physiology at the Society of Naturalists, Anthropologists and Ethnographers and became its chairman. Soon a physiological print publication began to be produced in Russia – “Le physiologiste Russe” – the organizer and editor of which was Morokhovets. The magazine was published at the expense of Y.I. Bazanova (1852–1924) from 1898 to 1914 in French and German and, as the introduction to the first issue said, “it was intended to familiarize the scientific world with the success of physiology, histology, general pathology, pharmacology and general bacteriology in Russia”.¹³

In 1907, Morokhovets was bestowed the rank of honored professor. In the newspaper “Russian Word” from October 31, 1907, an article was published containing the following: “Yesterday, during a lecture on the physiology by Honored Ordinary Professor L.Z. Morokhovets, students from the third, fourth and fifth semesters of the medical faculty offered him a congratulatory address on the occasion of 25 years of his scientific and teaching activities”.

Morokhovets had the honor of creating the journal “Proceedings of the Physiological Institute at Imperial Moscow University” (at first the publication was called “Proceedings of the Physiological Laboratory at Imperial Moscow University), of which he became the editor. The magazine published articles not only by physiologists but also by physicists, chemists and biologists from Moscow University, among the authors were Sechenov, Morokhovets, A.F. Samoilov, M.N. Shaternikov, Popov, O.N. Savelyev, G.N. Gabrichevsky, N.A. Umov and others.

Morokhovets’ public activities found their way into the Council of Moscow University’s “Considerations for the general tasks and functions of the university” [23], in which they discussed various aspects of the university, in particular, setting out the idea of increasing their autonomy. In this work, Morokhovets proposed (29 years before such a decision was taken!) to designate the medical faculty of Moscow University as an independent institution. “The Faculty of Medicine sharply diverges from the general nature of the activities of other departments and of itself begs the question of the designation of the Faculty of Medicine as an independent Imperial Medical Academy, as our Faculty of Medicine is already actually separated off from the university with independent buildings, specialized management, etc. All that remains is to transfer all five departments to Devichye Pole [location] and medical education in Moscow will only benefit” [23, p. 7].

In 1900, in order to popularize medical knowledge, Morokhovets read evening lectures at the Polytechnical Museum for the general public. The themes of these lectures were as follows: “Fundamental doctrines of the sick body”, “Fundamental methods of mechanical and pharmacological healing”, “Fundamental methods of mental healing of a scientific nature”.

¹³ Le physiologiste Russe, redire par M. le prof. Leon Morokhowets, v.I, Moskau, 1898–1899, p. 1.

Our understanding of Morokhovets' character is supplemented by his correspondence with a doctor and assistant professor at Moscow University, Terenty Ivanovich Vyazemsky (1857–1914), with whom he had a long friendship.¹⁴ Vyazemsky is known for his work in the field of electrotherapy, toxicology and other fields. In 1901, he bought a small estate at the foot of Kara-Dag in Crimea and decided to organize a scientific biological station there. Determined to enlist the support of Morokhovets, Vyazemsky invited him in the summer of 1905 to his estate, and Morokhovets warmly supported the idea. The following texts are from Morokhovets' letter sent to Vyazemsky from Feodosia on June 25, 1905: "Dear Terenty Ivanovich! I returned from you fascinated. Your kind hospitality and your property's wonderful location will never be erased from my memory and heart! I wrote to my friends in Moscow of your striking paintings and your enterprise. Before I could properly take in my impressions, new terrible events distracted my thoughts: the battleship "Prince Potemkin" stands in front of us with its formidable power – a terrible panic, but I remained all the time in Feodosia. Today, a new scandal: a Jewish drummer instead of a commander wounded an officer and killed one soldier.

My humble respects to you and your spouse. A deep bow to your children and Anna Fyodorovna. Yours, L. Morokhovets'.

In several publications on the Kara-Dag scientific biological station in Crimea, it was confirmed¹⁵ that Morokhovets only financed the construction of the biological station. However, correspondence with Vyazemsky suggested otherwise: over the course of many years, Morokhovets took an active part in this project, delving into all the details of construction and helping to solve many problems. The following is an example of one of the letters:

"27.09.07. Dear Terenty Ivanovich! Today I received your letter with the accounts and am now sending 200 rubles, which together with the

100 rubles sent to you on 22.09.07 will amount to the sum specified in the letter. We here, too, are not twiddling our thumbs: I found out where you can get accurate information about flat roofs, iron beams, stairs, oil engines, and so forth, etc. Yudin is taking an active part. I thank you in advance for the photo. A humble bow to all. Kisses. Faithfully yours, L. Morokhovets".

We also draw attention to a fragment of a letter written in one and a half years' time (July 7, 1909). At this time, Morokhovets was being treated in the Rukavishnikov sanatorium, which was in Moscow (at Kryukovo).

"Dear Terenty Ivanovich! On the third, funds of 664 rubles were sent and yesterday the two plans were sent that I humbly request that be cherished like the apple of one's eye. One plan is a cross-section of the station to display the direction of the internal stairs, the other is of the service building or, as you call it, "boarding"... I wish you health and energy for the successful continuation of our business. How is the library building, is it moving forward? One of these days I will send the plan of the library, I forgot to send it together with the others which have already been sent in the parcel. Bows and kisses. Lev Morokhovets".

The construction period of the biological station was a very difficult time for Morokhovets, but in spite of that he supported his friend. The correspondence between Morokhovets and Vazemsky indicates that up to Vyazemsky's death in 1914 they maintained friendly relations. Here is an excerpt from Morokhovets' letter dated September 1, 1910: "...The summer was good and successful, and I feel good, I only lack the conviction that I can instantly fix my mistakes, if there are any, and cannot travel to you now, to personally convince you that I am truly ready to finish our business in the best way. So, I am awaiting a telegram. It will be a comfort to me, and give me even more strength and health for the excellent completion of our station through which we will go down in eternity, and meanwhile I shake your hand and wish you peace of mind and more faith! L. Morokhovets".

According to Morokhovets' 49 letters and Vyazemsky's four letters that survive it is difficult to reconstruct in detail the circumstances of the construction of the Kara-Dag scientific station. However, they confirm the conclusion reached by the staff of the station: "We must

¹⁴ L. Z. Morokhovets' letters to T. I. Vyazemsky. 1905–1913. Central State Archive in Moscow until 1917, fund 1336, op. 1, d. 99.

¹⁵ See, for example, an article by Professor A. P. Sadchikov "Kara-Dag Biological Station (Crimea)" http://hydro.bio.msu.ru/index.php?option=com_content&view=article&id=170&Itemid=58

always remember that the station was created by T.I. Vyazemsky and L.Z. Morokhovets. We pay tribute to L.Z. Morokhovets. Without him it would be unlikely that the Kara-Dag scientific station would exist” [24, p. 34].

Morokhovets' personal life could hardly be called happy. Returning in 1878 from Germany to Moscow, he bought a house on Bolshoy Kharitonyevsky Alley, where he lived with his first wife, widow of provincial secretary Komarov, Pavla Pavlovna, with whom he was wed in Saint Petersburg on January 4, 1870. They had two daughters in Germany: Pavla (October 28, 1872) and Olga (April 28, 1874). In 1885, Morokhovets left his wife, who did not share his enthusiasm for science, and lived in a rented apartment. Soon he began an affair with Elena Miller (1863-1907), who left her husband – Doctor N.F. Miller.¹⁶ From a report of a police supervisor of February 13, 1897: “Morokhovets Lev Zakharovich, extraordinary professor at Moscow University, state councillor, 49 years old, living for approximately ten years at Armand house on Vozdvizhenka. With him lives Elena Miller, divorced wife of the state councillor, 34 years old, with whom Morokhovets has had an affair for several years. Morokhovets' mother lives there as well, by second marriage Kapitolina Alekseevna Nikulin, the widow of the court councillor, 68 years old... Lev Morokhovets is married, but does not live with his wife, her two children stay with her. Morokhovets has few acquaintances at the apartment due to the fact that he lives in a civil marriage with the said Miller. He works a lot at home, that is, he reads and writes. As they say, with a scientific purpose. He is reputed to be a good person. In the course of ten years of residence at this address nothing reprehensible has been noticed (except the civil marriage)”.¹⁷

Morokhovets lived with Miller for more than 20 years. On October 5, 1907, Morokhovets wrote to Vyazemsky: “I have sad news to inform you: Elena Ivanovna [Miller] died of heart failure yesterday and was buried in the Vagankovsky

cemetery”. After the death of his wife, he moved to a state-owned apartment (9 Mokhovaya Street) at the Physiological Institute of Moscow University. On April 15, 1912, he married 42-year-old peasant woman Pelagia Borisovna Rykhlova, who helped him with domestic matters, and lived with her for seven years.

In a number of articles on Morokhovets [7-9], it has been reported that he had resigned from the group of professors at IMU in 1911 in protest against the appointment of reactionary L.A. Kasso as Minister of Education.¹⁸ The official reason stated in the note by the Rector of the University of May 11, 1911 is as follows: “I inform the faculty of medicine that honored ordinary professor, State Councilor Morokhovets, having on May 10 served a 30-year period in the teaching department of the Ministry of National Education, pursuant to Art. 505 m. H XI. 1 ed. 1893, Morokhovets should be considered to have withdrawn from the list of full-time professors”.¹⁹

Excluded from the staff of the Faculty of Medicine, Morokhovets remained the director of the Physiological Institute of Moscow University for another year (until April 24, 1912), and then only gave lectures on the history and encyclopedia of medicine until the end of 1918.

One of the outstanding questions remains the date of Morokhovets' death. In his memoirs, M.M. Novikov, rector of Moscow State University (1919-1920), wrote: “One day I was informed about the death of the professor of physiology and students' favorite L.Z. Morokhovets, I found his body lying on the boxes in a shed in the back yard of the university ...The funeral presented a sorry picture for these honored workers of science. The modest coffin was carried on a simple, lumbering wagon to the cemetery” [25, p. 182]. After the death of Morokhovets, his widow, Rykhlova, turned to the newly created Central Commission for Improving Scientists' Living Conditions on December 13, 1921, with a request to issue her with a pension for loss of breadwinner: “For 45 years, my husband, L.Z. Morokhovets, was a professor at Moscow State University, Department of

¹⁶ Nikolai Fyodorovich Miller (1847–1897) was a renowned pediatrician, chief physician of the Moscow Orphanage, chairman of the Moscow Society of Physicians.

¹⁷ On doctor's wife Elena Ivanovna Miller's habitation without documentation in the apartment of Dr. Morokhovets. State Archive of the Russian Federation (GA RF), f. 63, op. 5, d. 252 (1885–1897), L. 8.

¹⁸ Lev Aristiidovich Kasso (1865–1914) – a Russian lawyer, Russian Minister of Education (1911–1914) and wealthy Bessarabian landowner.

¹⁹ Central State Archive of Moscow until 1917, p. 418, op. 89, d. 394. L.2.

Physiology, and he also held the same chair at the Petrovsko-Razumovsky Academy for 30 years. Intensive work undermined the health of my husband; in 1906 he had a stroke, which resulted in a paralysis of his left side. But despite this, he continued to work until shortly before his death, that is, until 1919”.²⁰ Subsequently, Morokhovets repeatedly asked for the pension to be increased. A request from September 24, 1928, indicates the

²⁰ Commission on the personal pensions in the RSFSR Council of Ministers. Private case. Morokhovets Lev Zaharovich. GA RF, f. A-539, op. 3, d. 2363.

exact date of Morokhovets' death: “November 18, 1919, my husband, Lev Zakharovich Morokhovets, an emeritus ordinary professor at Moscow University, died and I remained after his death without any means of subsistence”.

Morokhovets left a significant mark on the history of Moscow University as an outstanding scientist, teacher, organizer of medical science and medical education, and in the general public life of Russia in the late 19th and early 20th centuries. We hope that this information will allow us to provide a more complete picture of the Russian scientist and public figure.

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