## Mikhail Nikiforovich Nikiforov. To the 165<sup>th</sup> anniversary of his birth\*

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The article is devoted to the life and work of the prominent Russian pathologist, bacteriologist, scientist, educator and organizer, Doctor of Medicine, Honored Professor of Moscow University Mikhail Nikiforovich Nikiforov (1858-1915), who was born into a Moscow bourgeois family. In 1883, he graduated with honors from the medical faculty of the Imperial Moscow University with the degree of a doctor and with the title of a district doctor. In 1887, he successfully defended his doctoral dissertation on the topic "On pathoanatomical changes of the spleen in recurrent fever", in which he explained for the first time the origin of necrosis in the spleen in recurrent typhus. Throughout a relatively short but bright life, all scientific and pedagogical activity was inextricably linked with Moscow University, where the scientist went from student to head of the department and his scientific interests were various issues of general and private pathology (inflammation, tissue regeneration, anemia, circulatory disorders, histogenesis of granulation tissue, tumors, pathology of the nervous system infectious and gynecological pathology) and medical microbiology (methods of histological and bacteriological research). He is the author of scientific publications, including the first atlas of pathological histology, the first domestic textbook on pathological anatomy, which was republished many times, and manuals. He created a large school of pathologists, was the founder of the Society of Moscow Pathologists and the first Chairman of this society, was the first in Russia to use microphotography to accurately reproduce pathohistological changes in illustrative material for lectures, proposed in the field of microscopic technology a number of methods for monitoring the growth of microbes, staining microbes in sections and fixing objects, and in 1888 he proposed the optimal composition of the mixture for fixing blood smears ("Nikiforov's mixture"). M. N. Nikiforov rose to the rank of Major General, active state councilor and held a number of important administrative posts. He died on June 23, 1915, in Moscow at the 57<sup>th</sup> year of life from angina pectoris and was buried at the Novodevichy Cemetery.

*Keywords*: Mikhail Nikiforovich Nikiforov, pathologist, bacteriologist, scientist, educator, Imperial Moscow University.

November 4, 2023 marks the 165<sup>th</sup> anniversary of the birth of a prominent Russian pathologist, bacteriologist, scientist, educator and organizer, Doctor of Medicine, Honored Professor of Moscow University Mikhail Nikiforovich Nikiforov, a student of Ivan Fedorovich Klein [1] (Fig. 1, 2).

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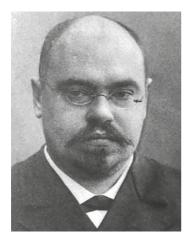




Fig. 1, 2. Nikiforov Mikhail Nikiforovich (04.11.1858–23.06.1915). Available at: https://ru.wikipedia.org/wiki/Никифоров,\_Михаил\_Никифорович (accessed: 17.07.2023); https://showslide.ru/patologicheskaya-anatomiya-soderzhanie-zadachi-obekti-meto-di-327553 (accessed: 17.07.2023)



Fig. 3. Church of the Annunciation of the Blessed Virgin Mary in Petrovsky Park. Available at: https://ru.wikipedia.org/wiki/Храм\_Благовещения\_Пресвятой\_ Богородицы\_в\_Петровском\_парке (accessed: 01.09.2023)

Mikhail Nikiforovich Nikiforov was born on November 4 (new style), 1858, in Moscow into a bourgeois family. His family life, looking ahead, consisted of his wife Nadezhda Alexandrovna Nikiforova, née Borisova (1864–1955), with whom he married in 1889 at the age of 30 in the Church of the Annunciation in Petrovsky Garden, Moscow, Nikitsky Forty (now the Church of the Annunciation of the Blessed Virgin Mary in Petrovsky Park, located at the address: Moscow, Krasnoarmeyskaya ul., 2) (Fig. 3) and five children: Nadezhda (born in 1894), Alexander (born in 1895), Ivan (born in 1896), Nikolai (born in 1897) and Natalia (born in 1898)<sup>1</sup>.

<sup>&</sup>lt;sup>1</sup> Mikhail Nikiforovich Nikiforov. Available at: https://www.geni.com/people/Михаил-Никифоров/6000000179866837830 (accessed: 31.08.2023).



Fig. 4. Professor M. N. Nikiforov (in the center) conducts a practical class on pathological anatomy at the Imperial Moscow University. Available at: https://vk.com/wall-108300401\_7785?ysclid=lmnl0fmk jm96287619 (accessed: 17.09.2023)

In 1878, Mikhail graduated with a silver medal from the 3<sup>rd</sup> Moscow Gymnasium and in 1883 from the Medical Faculty of the Imperial Moscow University (IMU) with the degree of doctor with honors and with the title of district doctor [2]. Immediately after graduating from IMU, from 1883 to 1885, he began working as an external prosector of the Old Catherine Hospital under the guidance of his teacher, Professor Ivan Fedorovich Klein, where at first he was engaged in bacteriology, microscopic studies and fell in love with pathological anatomy so much that even at home he equipped a laboratory at his own expense, located in several rooms, in the consequence of creating an unique collection of color slides of normal and pathological histology (about 4000 pieces) and by publishing the first textbook on microscopic technique, which later went through 8 editions [3]. In 1885, at the invitation of I.F. Klein, he was appointed assistant prosector at the Department of Pathological Anatomy of the IMU, where he taught a demonstrative course of bacteriology for sanitary doctors. In 1887, he successfully defended his doctoral dissertation on the topic "On pathoanatomical changes of the spleen in recurrent fever", in which he explained for the first time the origin of necrosis in the spleen in recurrent typhus, and in the same year he was approved as a prosector of the department of the same name at the IMU, and in 1888 he was awarded the degree of Doctor of Medicine [4] (Fig. 4).

From 1889 to 1890, he was on a foreign scientific trip to Germany for the purpose of perfection, working in the laboratories of the Swiss pathologist Ernst Ziegler in Freiburg and the German microbiologist and epidemiologist Georg Gafki at the Ludwig University in Giessen, where Gafki at that time began to build a new Hygienic Institute, and also listened to lectures by major German pathologists Rudolf Virchow in Berlin and Karl Weigert in Frankfurt am Main. During this fascinating and useful internship, Mikhail Ni-

kiforovich completed his well-known work on granulation tissue, in which he studied its structure and development, and gave an experimental refutation of Professor Ernst Ziegler's theory about the participation of leukocytes in the formation of granulation tissue, while performing a number of bacteriological studies and publishing them in German journals [5, 6].

After returning from a business trip to Moscow, M. N. Nikiforov intensively begins to improve Russian pathological anatomy, bringing it closer to the modern level, actively involved in the work on reforming the teaching system, and his titles and positions are growing in ascending order: in 1894 — privat-docent, in 1894 — extraordinary, and in 1901 — ordinary professor at the Department of Pathological Anatomy of the IMU, a little previously, in 1897 he was the head of the same department, in 1913 he was an honored professor and from 1913 to 1915 he was the Vice-Rector of IMU. In 1897, and until the end of his life, Mikhail Nikiforovich was elected to the post of director of the IMU Pathology Institute, which was already housed in a new building on Devichy Field [7, 8].

The scientific interests of the scientist during his relatively short but bright life were various issues of general and specific pathology (inflammation, tissue regeneration, anemia, circulatory disorders, histogenesis of granulation tissue, tumors, pathology of the nervous system, infectious and gynecological pathology) and medical microbiology (techniques histological and bacteriological examination) [9, 10].

M. N. Nikiforov is the author of more than 20 scientific publications, including an atlas, manual and textbooks. The scientist's main works are devoted to medical microbiology, improvement of histological and bacteriological methods, histogenesis of granulation tissue, recurrent typhus, morphology of chorionepithelioma (see the list of his main scientific works)<sup>2</sup>.

M. N. Nikiforov for his scientific and pedagogical activity was noted for the following achievements and awards: he compiled the first atlas of pathological histology and created the first domestic textbook on pathological anatomy, which was reprinted 9 times [11]; created a large school of domestic pathologists, among whom his students were academicians A. I. Abrikosov, I. V. Davydovsky, M. S. Melnikov-Razvedenkov, professors V. T. Talalaev, D. P. Kishensky, V. S. Devitsky, B. N. Mogilnitsky and others and organized the Society of Moscow Pathologists (now the Moscow Branch of the Russian Society of Pathologists), in which the connection was constantly demonstrated morphology and clinics and was the first Chairman of the Society of Moscow Pathologists [12]; the first in Russia to use microphotography to accurately reproduce pathohistological changes in illustrative material for lectures, the initiator and organizer of improving the pathological anatomical service, the reformer of the pathological anatomy teaching system<sup>3</sup>; in the field of microscopic technology, he proposed a number of methods for observing the growth of microbes, staining microbes in sections and fixing objects, in particular, in 1887, he developed an original method for staining spirochetes in blood smears and in 1892 he stained relapsing fever spirochetes in human spleen tissue, with This revealed the role of the spleen in immunity, and in 1888 he proposed the optimal composition of the mixture for fixing blood

<sup>&</sup>lt;sup>2</sup> Nikiforov Mikhail Nikiforovich. Available at: https://ru.wikipedia.org/wiki/Никифоров,\_Миха-ил\_Никифорович (accessed: 31.08.2023). (In Russian)

<sup>&</sup>lt;sup>3</sup> 160 years ago, pathologist Mikhail Nikiforovich Nikiforov was born (1858–1915). Diary of Moscow University // VKontakte. Available at: https://vk.com/wall-57936260\_2676?ysclid=lmnpi7wrgv683698386 (accessed: 17.09.2023). (In Russian)



Fig. 5. The tombstone monument is installed on the grave of Mikhail Nikiforovich Nikiforov at the Novodevichy Cemetery in Moscow. Available at: https://kartarf.ru/dostoprimechatelnosti/244085-mogila-nikiforova-mihaila-nikiforovicha-1858-1915?ysclid=lmnp0isbos248039109 (accessed: 17.07.2023)

smears ("Nikiforov's mixture") [13]. In 1896, in the study "On the So-called Malignant Deciduomas", Professor M. N. Nikiforov was the first in world practice to describe in detail the histogenesis of chorionepithelioma, where he proved the origin of this tumor from the chorial epithelium and demonstrated the inconsistency of the connection between its development and malignant deciduoma. When teaching a course in pathological anatomy, Mikhail Nikiforovich paid a lot of attention to sectional work and attached great importance to demonstration material. In 1989, the scientist studied the causative agent of rhinoscleroma, and described in detail its morphology and cultural properties. In addition, M. Nikiforov rose to the rank of Major General, full state councilor and held a number of important administrative posts [10].

Mikhail Nikiforovich Nikiforov, who was distinguished by such traits as deep erudition, enormous professional knowledge and efficiency, purposefulness, diligence, perseverance in achieving his goal, observation, thoroughness of research [14] throughout his scientific and pedagogical activity at IMU, and being an undisputed representative of the glorious cohort of Russian pathologists and a wonderful role model for the new young generation undoubtedly, it will forever go down in the history of Russian pathological anatomy, as well as the entire domestic medicine.

M.N. Nikiforov died suddenly on June 23, 1915, in Moscow at the 57<sup>th</sup> year of his life from the angina pectoris. He was buried at the Novodevichy Cemetery in Moscow [15] (Fig. 5).

## List of main scientific works of M. N. Nikiforov

*Nikiforov M. N.* About the methods of connective tissue research in inflammation // Proceedings of the II Congress of Doctors in memory of Pirogov. St. Petersburg, 1887. (In Russian)

*Nikiforov M. N.* An essay on the pathological histology of gynecological diseases in eight lectures. Moscow, 1899. (In Russian)

*Nikiforov M. N.* Anaemia splenica on the basis of Kala-azar type trypanosomyasis // Medical Review. 1910. Vol. 74, no. 12. P. 34–39. (In Russian)

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Nikiforov M. N. On the so-called malignant deciduomas. St. Petersburg, 1896. (In Russian)

*Nikiforov M. N.* Syphilis of the bicuspid valve of the heart. Moscow, 1889. (In Russian) The works of M. N. Nikiforov // A collection of articles dedicated to Professor of Moscow University Ivan Fedorovich Klein by his students on the day of the thirtieth anniversary of his teaching activity. Moscow, 1892. P. 2–24. (In Russian)

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## Михаил Никифорович Никифоров. К 165-летию со дня рождения\*

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Статья посвящена жизни и деятельности видного русского патологоанатома, бактериолога, ученого, педагога и организатора, доктора медицины, заслуженного профессора Московского университета Михаила Никифоровича Никифорова (1858–1915), который родился в Московской мещанской семье. В 1883 г. он с отличием окончил медицинский факультет Императорского Московского университета, получив степень лекаря и звание уездного врача. В 1887 г. успешно защитил докторскую диссертацию на тему «О патологоанатомических изменениях селезенки при возвратной горячке», в которой впервые объяснил происхождение некрозов в селезенке при возвратном тифе.

<sup>\*</sup> Данная публикация является переводом опубликованной ранее статьи:  $3убрицкий \ A.H.$  Михаил Никифорович Никифоров. К 165-летию со дня рождения основателя Общества московских патологоанатомов // Математическая морфология. Электронный математический и медикобиологический журнал. 2023. Т.22. Вып. 4. URL: http://sgma.alpha-design.ru/MMORPH/N-80-html/zubritsky-5/zubritsky-5.pdf (дата обращения: 27.10.2023).

На протяжении относительно короткой, но яркой жизни вся научно-педагогическая деятельность М. Н. Никифорова была неразрывно связана с Московским университетом, где ученый прошел путь от студента до заведующего кафедрой. Его научными интересами были различные вопросы общей и частной патологии (воспаление, регенерация тканей, анемии, нарушение кровообращения, гистогенез грануляционной ткани, опухолей, патология нервной системы, инфекционная и гинекологическая патология) и медицинской микробиологии (методики гистологического и бактериологического исследования). Его перу принадлежит множество научных публикаций, в том числе им составлен первый атлас патологической гистологии, создан первый отечественный учебник по патологической анатомии, который переиздавался много раз, и руководства. Он создал крупную школу патологоанатомов, являлся основателем Общества московских патологоанатомов и первым председателем этого общества, первым в России использовал микрофотографию для точного воспроизведения патогистологических изменений иллюстративного материала для лекций, предложил в области микроскопической техники ряд методов наблюдения за ростом микробов, окраски микробов в срезах и фиксации объектов, а в 1888 г. разработал оптимальный состав смеси для фиксации мазков крови («смесь Никифорова»). Дослужившись до чина генерала-майора, действительного статского советника, ученый занимал ряд важных административных постов. М. Н. Никифоров скончался 23 июня 1915 г. в Москве на 57-м году жизни от «грудной жабы» и похоронен на Новодевичьем кладбище.

*Ключевые слова*: Михаил Никифорович Никифоров, патологоанатом, бактериолог, ученый, педагог, Императорский московский университет.

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