

## The unspoken history of medicine in Russia

### *La storia non raccontata della medicina in Russia*

ELENA BERGER<sup>1</sup>, NINA CHIZH<sup>2</sup>, KONSTANTIN PASHKOV<sup>2</sup>, GENNADY SLYSHKIN<sup>3</sup>, MARIA TUTORSKAYA<sup>3</sup>

<sup>1</sup> Institute for the World History, Moscow, Russia; <sup>2</sup> Russian Museum of Medicine of the NA Semashko National Research Institute of Public Health, Moscow, Russia; <sup>3</sup> Moscow State University of Medicine and Dentistry named after AI Evdokimov, Moscow, Russia

This paper analyzes the cases of neglect and inadvertence in Russian medical history. Closer scrutiny of the vivid examples of the artifacts and names that were not recognized and honored, or were crossed out for some reason, could give us an alternative outlook on the Russian medical heritage and provide more complete picture of the framework. Some possible reasons for such neglect might be the absence of artifacts or technologies for their study (Birch bark manuscripts from Novgorod or human remains from Sungir); preference to the extraordinary units in prejudice of common things (Kunstkamera); semantic blindness to nurses, women and patients in favour of male doctors; and political trends (anti-genetics campaign in the USSR). But at the same time the role of medicine in the State and the society as a whole was underestimated for a long time. It is proved by the representation of doctors in public environment – the first monument to the doctor, that of Nikolay Pirogov, was unveiled only in the end of 19<sup>th</sup> century –. We analyze these issues using the materials of the Russian Museum of Medicine of the NA Semashko National Research Institute of Public Health.

**Key words:** Medical museology, medical cultural heritage, Russian medicine, Nikolay Pirogov, Vladimir Demikhov, Novgorod birch bark manuscripts

*Questo saggio analizza i casi di oblio e di trascuratezza nella storia medica russa. Uno sguardo più ravvicinato ad alcuni esempi emblematici di oggetti o personaggi che non sono stati riconosciuti e onorati, o che per qualche ragione furono cancellati, può fornire una visuale alternativa sul patrimonio materiale della medicina russa e dare un quadro più completo della situazione. Alcune possibili ragioni per tali “dimenticanze” possono essere l’assenza di tracce materiali oppure delle tecnologie adatte al loro studio (si pensi alle iscrizioni novgorodiane su corteccia di betulla o ai resti umani di Sungir); preferenza per gli oggetti di natura straordinaria a detrimento di quelli più comuni (Kunstkamera); una sorta di cecità semantica per infermiere, donne in genere e pazienti, a favore del medico maschio; tendenze politiche (ad es., la campagna contro la genetica nell’URSS). Ma, al tempo stesso, il ruolo della medicina nello Stato e nella società nel suo insieme fu sottostimato per lungo tempo. Tutto ciò è dimostrato dalla raffigurazione di medici negli spazi pubblici – il primo monumento a un medico, quello a Nikolay Pirogov, fu inaugurato solo alla fine del 19° secolo –. Analizzeremo questi argomenti utilizzando il materiale proveniente dal Museo Russo di Medicina dell’Istituto Nazionale di Ricerca sulla Salute Pubblica “NA Semashko”.*

Address for correspondence  
Indirizzo per la corrispondenza

Elena Berger  
Institute for the World History  
Moscow, Russia  
e-mail: lenaberger67@gmail.com

**Parole chiave:** Museologia medica, beni culturali medici, medicina russa, Nikolay Pirogov, Vladimir Demikhov, iscrizioni novgorodiane su corteccia di betulla

The cases of honoring medical history and paying tribute to the doctors of the past are part and parcel of the preservation of health-related material heritage. However, monuments and material artifacts are not only speaking and significant for the history of medicine at large.

In this paper, we do not adduce the infinite Russian medical historical highlights and masterpieces list, but analyze cases of neglect and semantic blindness. We do it by means of the proof by contradiction method. Closer scrutiny of the examples of the artifacts and names that were not recognized and honored, or were crossed out for some reason, could give us an alternative outlook on the Russian medical heritage and provide a more complete picture of the framework. Omission as a figure of speech is no less “speaking” than the text engraved in stone.

Honoring some phenomenon as well as researching it, primarily depends on what is attainable and what is lost. Research methodology available at this or that time is one more a stumbling block. The most telling examples of this point can be found in understanding the paleo-medicine heritage.

It is well known and confirmed by the archeologists that stones, bones and teeth, metal artifacts are conserved much better than objects of wood and other organic materials. Evidently, ignoring all these missing materials could completely change the picture of the past.

A vivid example of the emergence of new subjects of study that change our perspective for the Russian history as a whole, and particularly social history and history of medicine, are the archeological discoveries made in the Russian North, especially in Novgorod – one of the Russia oldest cities. – The city was founded in the early 9<sup>th</sup> century as an outpost of Kiev, and soon became a leading European trading center in the Baltic region. It was the center of a vast territory east of today’s Estonia up to the Ural Mountains. This case is an exception, due to the particular qualities of the soil and climate. Novgorod was built on “clay strata that have almost perfectly preserved its past” (Yanin 2006) – even organic – giving an unexcelled view into medieval Russ.

Birch bark manuscripts and wooden artifacts found by the archeologists there complemented the view on the lifestyle and helped to get more vivid reconstruction of the historical practices and ways of life. Without these pieces of information about medieval Russia, the number of written sources of social history that implies all human experiences including health and disease would be vanishingly small. The chronicles, with their focus on “princes and bishops, military leaders and constructors of famous churches” (Yanin 1990), kept silence of people of other strata and their practices.

Birch bark manuscripts were a missing source until the middle of the 20<sup>th</sup> century. The first text, *gramota*, was found by the archaeological expedition led by Artemiy Artsikhovskiy in 1951. Today the number of birch bark manuscripts is more than 1000, most dating from the 11<sup>th</sup> to the first third of the 13<sup>th</sup> century (Zaliznyak and Yanin 2013). Some of these

manuscripts were written as spells (*zagovory*) against diseases. Texts of this genre mention a figure of Sikhail (nn. 521, 674, 715, 734, 930) that was not included in Christian canon and belongs to pagan cult. It turns out that he was extremely popular in folk medicine as a defender from the fever and a fighter with its incarnations, which sometimes appear in the form of simple-minded females.

Not only new written historical sources got voice and flesh in the last half a century. Some findings, made long time before, began to “speak up” thanks to the new technologies and methods. Digital microfocus X-ray imaging, computed tomography, DNA analyses, provided the disclosure of completely new histories behind the items that seemed carefully chosen and well-studied. It means that the preservation of material traces provides the opportunity to review them and to look for their new significance. Recent discoveries in paleobotany, paleodietology, food adaptations and used environmental resources relying on these methods, led to the revision of the paleopathology.

One of such discoveries is Sunghir, a unique archaeological site along with Cro-Magnon, Brno, and Chancelade, with its four burials and human fossils remains. The site is situated on the outskirts of Vladimir, about 200 km north from Moscow. Radiocarbon dating yielded its ages back to the early upper paleolithic and the early phases of human occupation of high latitude continental Eurasia.

When these remains were found, the research focused on their morphometric relationships to other Paleolithic remains. Traditional approaches prescribed discrete morphological attributes, accurate measurements of the remains, dimensions and their discrete morphological configurations (Trinkaus et al. 2014). Later research armed with new technologies allowed to reveal the genetic relationship between boy (Sunghir 2) and girl (Sunghir 3) by reason of the similarities in their mitochondrial DNA. The X-ray analysis of the remains of an older man (Sunghir 1) revealed “*Harris lines, which were more pronounced in the distal part of the bones but of less significant length in the proximal part*”. Thus, X-rays results pointed on the metabolic disorder experienced in childhood, most likely rickets (Buzhilova 2005), that in mild degree does not produce skeletal deformations and will not be detected without scan. All these particular findings provided a more full reconstruction of the conditions that humans lived in at the end of the upper paleolithic time.

Undoubtedly, what is preserved and what is missing depend not only on climate, soil characteristics and technologies. One of the main factors is what kind of medical heritage is conserved or destroyed at the behest of people. The preservation of artifacts is mainly the task of museums. Finding and research specified above were made by the professors of the Moscow State University and the curators of the archaeology and anthropology museums. These museums of the oldest University in Russia, founded in 1755, follow the pattern set in the beginning of the same century.

The first state public museum in Russia was created in 1714 by the emperor Peter I the Great (1672-1725) who pursued the policy of westernization and therefore replaced many traditional Russian everyday life features with the European ones. European style in architectural design, clothes and food spread in Russia.

While travelling around Europe – Grand Embassy of Peter the Great (1697-1698) – Peter I met members of the European royal families and scholars, and toured their galleries and collections. As all his contemporaries, Peter considered it important to preserve extraordinary items. The first museum collection grew from Peter's "cabinet of curiosities" and got the name of "Kunstkamera" (Radziun and Chistov 2012). There one could see "fish, reptiles and insects in bottles", mathematical, physics and chemistry instruments as well as rare books. In 1718 the emperor issued an order "about delivering of monsters and other curiosities found". It was aimed at enlightening the ignorant people who believed that "monsters are born due to devil's powers through sorcery and evil curses, which is impossible, since the creator of all creatures is God, not the devil". For the Kunstkamera, Peter I bought an anatomical collection of a famous Dutch professor of anatomy, Frederik Ruysch (1638-1731) (Boer et al. 2017). Specimens with congenital anomalies are a part of this collection. The material history of medicine exhibited in the Kunstkamera was conceived as a collection of curiosities and rarities.

Before Peter's reign, there were no museums in Russia, so there was no habit to tour them. Russian people were seized with horror while watching the anatomical collections, and according to the legend, every visitor of the Kunstkamera gained a glass of vodka and a pie – these measures were taken in order to increase the number of guests –. Nevertheless, the Kunstkamera started to form gradually the tendency to observe and study the human body, which was necessary especially for medical students.

Material medical heritage of that epoch emphasizes the diversity of the world not recognizable by people in their common life. Bizarre and quaint objects, and attention for the rarities, were typical of the baroque culture in Western countries. The interest for medical norm seems to come later and was connected with the rise of medical education in Russia.

The most important event in this sphere took place in the middle of the 18<sup>th</sup> century, when the first Russian university was founded in Moscow. Anatomy was studied from the very beginning, lectures were followed by "anatomical experiments". Some specimens for the Moscow University were also taken from Frederik Ruysch's anatomical collection. In 1812, during the Napoleon wars, Moscow was burnt down and the University suffered much from fire. After the war, Moscow University was restored, and above all a new collection of specimens, waxworks, and drawings was purchased for the anatomical museum. This collection was compiled by Christian Loder in Germany, France and England. Christian Loder headed the Department of anatomy and initiated the building

of an anatomical theatre. The edifice was intended for 250 students. Part of Loder's collection survived to the present day.

It seems that the use of anatomical specimens became an approved educational standard at least in the beginning of 19<sup>th</sup> century and that specimens were preserved as an inalienable part of material medical heritage. However there are facts that contradict this presumption. Such was a notorious event in the Kazan University founded in 1804. In 1819, a revision of the university took place, held by the curator of Kazan educational district, Mikhail Magnitskiy, who, supposing disloyalty and atheism among the professors and students, took measures to remedy the situation. Among all, he ordered to bury the anatomical collection according to Christian rites (Vishlenkova 2003). Mikhail Magnitskiy and his like minds supposed the dissections incompatible with true Christianity. Russian historians of that period characterized that issue as the triumph of the Russian Orthodox Church over science.

In the 20<sup>th</sup> century, the pendulum swung to the other side. After the 1917 revolution, repressions began against religion. Monasteries, cathedrals and even small churches were closed or destroyed. Sometimes these building changed their destination. One of such alterations was significant to the history of medicine. The Church of the Venerable Dimitry Prilutsky on the Devichye Pole was built there to pay last honors to those who died in the wards of the Clinic town of the Moscow University built in 1890s. The church was closed not immediately after the revolution but only in 1950s. The building was converted into the transplantation laboratory led by Vladimir Demikhov (1916-1998 – the pioneer in organ transplantation and the first in the world who performed a complete heart and lung replacement (Fig. 1) –. Definitely, the former church was not the best place for the scientific laboratory with no decent conditions for the experiment, saying nothing of the moral aspect of the problem. However in the 1940s-60s Soviet Ministry of Health and most of the medical community were quite skeptical about Demikhov's experiments, so he did not deserve a well-equipped laboratory but only such premises that seemed worthless according to the communist values.

During his lifetime, Demikhov did not receive much recognition in his homeland (Fig. 2). Notwithstanding, his contribution to the development of transplantation was noted internationally. In particular, Christiaan Barnard, who performed the world's first heart transplant operation, wrote in 1997 that Demikhov "*was certainly a remarkable man, having done all the research before extracorporeal circulation. I have always maintained that if there is a father of heart and lung transplantation, then Demikhov certainly deserves this title*" (Konstantinov 2009).

The first successful experiments for transplantation carried out by Demikhov took place in Dimitry Prilutsky Church. Nowadays there is a memorial plaque on the church's wall, put up in the 1990s (Fig. 3):



**Figure 1.**  
*Hand-made surgical instruments of Vladimir Demikhov, Russian Medical Museum, Moscow.*



**Figure 2.**  
*Medical records of Vladimir Demikhov, Russian Medical Museum, Moscow.*

*Within the walls of the church of St. Dimitry Prilutsky in the Devichye Pole during the persecutions of the church in the 50-60s of the XX century, a laboratory for organ transplantation was placed at the First Moscow Medical Institute named after I. M. Sechenov. Here the great Russian scientist, the founder of the world transplantology Vladimir Petrovich Demikhov (1916-1998) conducted the world's first successful experiments on organ transplantation. Eternal memory to the devotee of science.*

The plaque was unveiled there with the blessing of His Holiness Patriarch Alexy II of Moscow and all Russia after the building was returned to the Russian Orthodox Church and the services there resumed.

The monument to Vladimir Demikhov was placed there

only about twenty years after his death. The eighth all-Russian Congress of Transplantologists that took place in the Federal Research Center of Transplantology and Artificial Organs in Moscow in 2016 was “dedicated to the 100th anniversary of Vladimir Petrovich Demikhov”. In front of the building, the memorial to Demikhov was unveiled and a lecture devoted to the 100th anniversary of Demikhov, named “Vladimir Demikhov, a man of an unbending spirit”, was read.

The monument to Demikhov is one of the most “young” monuments devoted to physicians in Russia. Generally, the tradition of establishing monuments and memorials to medical professionals is not so old. Though medicine in Russia was closely connected with the state from the very beginning and the proto-Ministry of Health (*Aptekarskiy prikaz*) appeared there yet in the 17<sup>th</sup> century, however, for a long time the medical profession was not among the most honorable and respectable ones. This can be proved by the fact that there were no monuments to medical men until the end of the 19<sup>th</sup> century, not to speak of monuments devoted to women-doctors, nurses or patients.

The first “medical” monument was established in honor of the eminent surgeon Nikolay Pirogov in 1897 (Fig. 4). However, it was not the state that provided funding for the monument, but the Russian medical community. Nikolay Pirogov (1810-1881) was deeply respected by colleagues. He was honored during his life both nationally and internationally as anatomist and surgeon, and as the originator of an effective mode of amputating the foot. He was the first who used anesthetics widely in military surgery. Pirogov proved himself also as a good medical administrator and reformer, the one who introduced women nurses into military and civil hospitals in Russia, and a thoughtful writer. Above all, he took part in the Crimean war of 1853-1856 as a military surgeon, encouraged female volunteers as an organized corps of nurses, visited hospitals during the Franco-Prussian War of 1870 as a representative of the Russian Red Cross.



**Figure 3.**  
*Memorial plaque to Vladimir Demikhov, Moscow.*



**Figure 4.**  
The monument to Nikolay Pirogov in Moscow (sculptor Vladimir Shervud).

Pirogov also treated Giuseppe Garibaldi in 1862, when he was wounded in the battle at Aspromonte. Pirogov's examination and his advice not to remove the bullet from the bone immediately went in contradiction with the recommendations of Garibaldi's surgeons from Britain and France, but it turned to be right (Moscucci 2001).

The most prominent and representative medical society – the “Society of Russian Practitioners in Memory of Pirogov” – bears his name. Unveiling of the statue was one of the features of the XII International Medical Congress week in 1897. Sculptor Vladimir Shervud pictured the scientist sitting in a low back armchair. He is holding a skull on the left knee and is leaning on the right arm on the elbow-rest of the armchair.

The unveiling of this monument can be considered as the starting point for the further dialog between the “medical world” and society. Gradually physicians became visible and got their voice. The works of physicians-writers as Anton Chekhov, Vikenty Veresaev and Mikhail Bulgakov were widely discussed both among their colleagues and among non-medical people. The names of these authors were put in the same line of Leo Tolstoy and Fedor Dostoevsky. Literary activity facilitated the promotion of the medical profession; the same did the Soviet ideology paradigm of socialist health care model with state-funded health care to all citizens. It is not surprising that in the 20<sup>th</sup> century many monu-

ments and busts were created and took a prominent place in the public spaces.

In 1935, the XV International Congress of Physiology took place in Moscow and Leningrad. It coincided with the installation of several monuments. Near the Institute of Experimental Medicine and near the Physiological Institute of the USSR Academy of Sciences of the research campus in the village of Pavlovo (Koltushi) appeared the busts of Charles Darwin, Louis Pasteur, Ivan Sechenov, Dmitry Mendeleev, René Descartes and Gregor Mendel, all created by sculptor Innokenty Bepalov. At the initiative of academician Ivan Pavlov who got the Nobel Prize in 1904, “in recognition of his work on the physiology of digestion, through which knowledge on vital aspects of the subject has been transformed and enlarged”, a monument to the dog was also installed, as a sign of respect for its role in scientific experiments. The monument represents a fountain with a dog on a pedestal decorated with citations from Ivan Pavlov's work, concerning experimental animals, and scenes from the laboratory activities. Water in the bowl of the fountain poured from the mouths of eight mascarons in the form of the heads of dogs.

At the end of 1940, Descartes and Mendel disappeared from the Institute's yard: their busts were destroyed when the campaign against genetics and “cosmopolitanism” began in the Soviet Union. In August 1948, during the meeting of the Academy of Agricultural Sciences (VASKhNIL) formal genetics in the Soviet Union was banned for almost twenty years. It was replaced by “Michurinist” agrobiolgy with Trophim Lysenko as the leader of Soviet biology. Genetics was criticized for its “reactionary character”. Research and teaching in standard genetics were eliminated and a number of leading genetics laboratories closed down (Graham 1993), while many scientists were imprisoned and perished. According to testimony of the researchers of the Pavlov's museum in Saint Petersburg, Mendel bust was hidden in the attic for years and returned on public display only when anti-genetics campaign was over and its proponents were declared pseudoscientists.

It is worth mentioning one more remarkable monument dedicated to genetics here. The monument to the laboratory mouse knitting a DNA strand was open in 2013 near the Institute of Cytology and Genetics of the Russian Academy of Sciences in Novosibirsk (Fig. 5). The monument “commemorates the sacrifice of the mice in genetic research used to understand biological and physiological mechanisms for developing new drugs and curing of diseases”.

The paradox is that, even though the role of laboratory animals is quite recognized, women's role in healthcare is still discriminated. Despite the fact that, according to stats, by the 1970s 72% of Soviet doctors were women (in comparison to 10% before 1917) (Great Soviet Encyclopedia 1970) there are only few monuments to women-doctors. There is even no monument to Zinaida Ermolieva (1898-1974), an outstand-



**Figure 5.**  
*The monument to laboratory mouse, Novosibirsk.*

ing microbiologist, who independently of Alexander Fleming synthesized penicillin. At the same time, the number of monuments to women-nurses is quite big in Russia. Most of them were honored for their deeds on the battlefields of the Second World War.

A bronze monument to the outstanding neurophysiologist Natalia Bekhtereva (1924-2008, scientific director of the Institute of the Human Brain of the Russian Academy of Sciences), was dedicated in St. Petersburg at the Walk of Fame of the Humanitarian University of Trade Unions in 2008. Her studies were devoted to the physiological basis of mental activity. Natalia Bekhtereva was the first in the USSR who used the method of long-term implantation of electrodes into the human brain for diagnostic and therapeutic purposes.

The essential part of saving memory and giving due to notable medical events and people is to be considered as scientific research as well as promotion of the medical heritage material. Research and study conducted by museum curators set a goal to broaden the representation of the medical issues in Russia. The Russian Museum of Medicine in Moscow is associated with the National Research Institute of Public Health named after NA Semashko. It was reopened on December 1, 2015, in a 19<sup>th</sup> century detached house (Pashkov et al. 2017). The collection of the museum include 311,622 items, including: medical orders awarded by the monarchy, Soviet State, and Red Cross in recognition of doctors' merit;

Rosta and other Soviet healthy lifestyle propaganda posters; pharmacy equipment of the 19<sup>th</sup> and early 20<sup>th</sup> centuries, medical instruments and equipment, medical manuscripts and printed books (16<sup>th</sup> - 20<sup>th</sup> century), documents and archives, wax models.

The collection covers the medical history from the middle of the 17<sup>th</sup> century to our days. It includes Pirogov's medical bag and surgical instruments used by him, copy of his portrait and bust made by Ilya Repin, and lifetime editions and collected works published after his death. There are also materials about Demikhov's work: medical records made by him during operations, medical instruments that were made by his own hands.

However, not all areas of medicine are presented. Surprisingly, the most alarming situation is not in the heritage of the distant past but in complementing museum funds with recent material heritage of science that become real rarities. The museum is especially interested in the heritage of the past 50-70 years that needs to be scrutiny selected, museified, and annotated. The museum works in close connection with the medical community to preserve equipment that is no more used nowadays and is replaced with more modern analogues within the framework of the general state policy of modernization of the healthcare.

Summarizing, we could state that absence of systematization in description and presentation of facts and events results in numerous lacunas in Russian history of medicine, but the presence and types of these lacunas are able to give a lot of information on the medical history and on the relations of medicine, state and society.

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