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## LIGHTS AND SHADOWS IN MODERN PIROGOV STUDIES

*It is known to everybody that the first law of history is never to admit a lie – not to be afraid of the truth, and not to admit a single shade of predilection or spite.*

*Cicero*

More than a century has elapsed since the death of the great surgeon, anatomist, lecturer and patriot Nikolai Ivanovich Pirogov (1810—1881). According to Geselevich and Serebrennikov, there are more than 3,000 publications concerning Pirogov's life and work[1]. The "wonderful doctor" has been described in fiction by such well-known pre-Soviet Russian writers as Hertsen, Leskov, Korolenko, Kuprin, Bunin and Sergeev-Tsenski, as well as by many Soviet authors. The great artist Repin did portraits of Pirogov, while his heroic deeds in the besieged city of Sevastopol can be seen in the famous panorama by Roubaut. Films and plays about the great surgeon have also been produced.

Early contributions to the study of Pirogov's work were made by his first biographers. Among them were Bertenson, Malis, Razumovsky, Tezyakov, Snegirev and Shtraikh. Significant contributions were also made by Bukin, Geselevich, Georgievsky, Korneev, Maksimenkov, Oborin, Opper, Rufanov, Semeka, Smirnov and Khazanov.

An important event in the history of medicine was the appearance of an eight-volume edition of Pirogov's works. The books were published between 1957 and 1962 by Geselevich, Korneev, Maksimenkov and Rufanov.

Even a cursory examination of the enormous list of publications which concern the activities of the great surgeon and anatomist shows that articles and sketches written for periodicals dominate, while books and individual booklets are not too numerous (according to Shabunin, there are approximately 100). The most thoroughly covered spheres of Pirogov's activities are his work in general and military surgery, as well as in other branches of military medicine. In this connection the works of Burdenko,

Zhorov, Elansky, Maksimenkov, Oppel, Semeka and Smirnov are of special importance.

The accomplishments made by modern studies of Pirogov cannot be denied, although there are also drawbacks and problems which remain unsolved or only partially solved. When reviewing all the numerous publications on Pirogov, one cannot fail to notice the considerable difference between works published before October 1917 and those published later. The memoirs of Bertenson, Botkin, Modzalevsky and Sklifosovsky, as well as the original works of Malis, Oppel and Shtraikh, all depict the great scientist as a human being with all of his passions, merits and drawbacks. The methodology of these works was once described by Andre Maurois, the author of many biographical novels. He wrote: "There is a man. I have a certain number of documents and evidences about him. ... We want all the documents to be used if they throw light upon new aspects on the subject: fear, admiration or hostility cannot make a biographer ignore or conceal anything." [2]

Of course the autobiographical works and letters written by Pirogov himself ("The Diary of an Old Doctor", "Letters from Sevastopol", et al) are of great value, as are reminiscences about him. According to Pokrovsky, memoirs are unique and irreplaceable because they show "... the psychological background and the associative connection without which the disconnected documents we have cannot be understood or can be misunderstood." [3] Unfortunately, in studies of Pirogov such sources are rather scarce.

Studies written after the Bolshevik revolution, including those concerning the history of medicine, were created under extremely difficult conditions. As Rozanov wrote in his memoirs, "the Iron Curtain fell upon Russian history with a rumble." [4] Some historians were either executed or sent into exile, while many of those who remained went, step by step, to the Utopian ideology, writing thoughtless comments and praising the authorities of the Party. For decades, textbooks and historical works distorted some aspects of the life of Russian society. What was white became black, what was black became white, dwarfs and giants exchanged places and some characters grew to the size of mythical Titans. Generations of people grew up in the stifling atmosphere of duplicity, far-fetched priorities and values. Studies in history, including the history of medicine, were penetrated not only by machination and prejudices but sometimes even by outright lies and primitive myths. In science and the arts, only Communist authorities decided "who should stay alive and be praised and who should be dead and cursed" [5]. The

very idea of historical truth was discarded. Thus, when the head of the Central Political Department of the Soviet Army and Navy, A.A.Yepishev, was speaking to the editorial staff of the writer Tvardovsky's magazine *Novy Mir*, he could say, without concealing his cynicism, "In *Novy Mir* they say, 'Give us brown bread or the truth'. Why should we need the truth if it is not profitable?"[6] Indeed in this country the concept of "profitable truth" has dominated historical studies and has not been fully eradicated even today.

Because of these facts, most works on Pirogov published under the Soviet regime are characterized by extreme ideological enslavement, adherence to the so-called "discipline of Lenin's Party", and toadying to the authorities. Of course the authors could not be blamed, but rather pitied. One should also realize that articles about Pirogov were often commissioned by magazines to observe one or another of his anniversaries, which resulted in repetition of well-known facts and even specific phrases. Of course such articles could not bring anything new to studies of Pirogov. Thus, even though there were many publications on Pirogov after 1917, they are most contradictory and restricted with often disputable information.

During the first decade after the Bolshevik revolution Pirogov's merits were, as a rule, underestimated. Later, however, beginning in the 1940s and 1950s, they were overestimated with a similar tendency to ignore the true facts. In both cases Pirogov's own statement that "to serve science or the arts requires nothing but the truth"[7] was violated.

The article "Pirogov" which appears at the beginning of Volume 25 of the first edition of the "Big Medical Encyclopedia" (1933) states that he "... spontaneously absorbed ... the fundamentals of vulgar materialism, empirico-experimental positivism and emotional atheism ..." and, further, that "... after moving to St. Petersburg P[irogov] acquired wealthy patients, was on friendly terms with the higher bourgeoisie, nobility, governmental officers and even courtiers. Thus, for P[irogov] it was a period of 'ideological double bookkeeping' – materialism in the anatomist's room and in the operating room and an idealistic, servile attitude toward religion in the sphere of family, official and social relations ... This fading period in P[irogov]'s life was marked by the final chords of 'The Diary of an Old Doctor' – a sad and miserable picture of the political degradation of the great man." [8] The anonymous article further quotes a respectful speech given by a professor of theology from the University of Moscow at the dedication of a monument to Pirogov in 1897, but concludes: "The hypocrite and renegade P[irogov] was worthy of this Judas kiss". The

author demonstrates no respect for Pirogov and is highly inaccurate concerning biographical details and data. For example, the author writes that "the most creative period" of Pirogov's life was the time which the scientist spent in Derpt, while all other sources indicate that it was in St. Petersburg that Pirogov revealed himself to be a great surgeon and wrote his most important works. According to the encyclopedia article, Pirogov created his "sculptural" anatomy after returning from the Crimea in 1856. In fact eight sections of the atlas "Topographical anatomy based upon the sawn, frozen dead bodies" – were published in September 1853. Furthermore, the article misstates the name of the village where Pirogov kept a manor house (it was Vishnya, not "Vishnyaki," as stated in the article), and it insists that Pirogov performed his first operation under ether anaesthesia one year after W.Morton did it (in fact it was four months later). Such instances are numerous in the article.

An entry on Pirogov in the "Big Soviet Encyclopedia" was written (also anonymously) with greater reticence, although in it, too, the great surgeon is accused of "reactionary" ideas[9].

This ideological orientation is typical throughout many works on Pirogov. For example, Volkov, while expressing appreciation for Pirogov's great contributions toward medical research, termed him a pseudo-patriot, a political coward, and incorrigible careerist and reactionary. Justly protesting against all kinds of camouflage, "virtuous lies" and "adoration of religion" in Pirogov's studies, Volkov ran into severe criticism and made the great scientist and patriot look like an ordinary philistine interested in nothing but his career[10]. Similar ideas were expressed by Poznyakov in his article, "A sketch of Pirogov's philosophical ideas"[11].

During the 1920s and 1930s, famous pre-revolutionary persons such as Pirogov were underevaluated in order to make people believe that czarist Russia was backward and to emphasize the "advantages" of socialism. In the early 1940s, however, it became more advantageous for the ideological authorities to lean in the opposite direction, idealizing some aspects of pre-revolutionary Russia and resuscitating the names and merits of some prominent people from that era.

After the victory over German fascism, a fierce campaign against "cosmopolitanism" was begun. Naturally this led to the falsification of Russian history, as well as the history of science and the arts. Russia was set apart from global civilization in that all discoveries and inventions were attributed to Russian scientists and scholars.

This could not help but affect studies of Pirogov. In 1937, at the very climax of Stalinist terror, Burdenko wrote that Pirogov had been "... a man

well-known in Europe, a unique scientist of his time, surpassed by none of his contemporaries, not only in Russia, but certainly in Europe, as well ..."[12]. In 1941, Yudin was equally categorical: "I am not mistaken in saying that Pirogov was the most outstanding surgeon in Europe in the middle of the last century."[13] And Zhorov offered no doubts in stating that Pirogov was "the famous leader in surgery in the second half of the 19th century."[14]

From a psychological point of view, it is difficult to express disagreement which such prominent scientists as Burdenko and Yudin, but the search for truth must rely only upon historical facts, and the facts tell us that there were many surgeons and anatomists in Europe and America who were contemporaries of Pirogov's and were no less famous than he. We shall mention only a few of them:

- Johann Friedrich Dieffenbach (1794—1847) – one of the founders of plastic surgery. He developed the operation of skin graft-rhinoplasty and wrote extensively, including a book on operative surgery which was translated into many languages. Pirogov wrote of Dieffenbach in his memoirs: "His plastic operations made him famous. He had a real genius for plastic operations. Dieffenbach's capacity for invention in this sphere of surgery had no limits."[15]
- Konrad Langenbeck (1776—1851) – the founder of one of Europe's greatest schools of surgery, the teacher of such prominent surgeons as Billroth and Esmarch. He developed numerous methods of surgical interventions (including joint resection), 21 of them being designated with his name. He was very skilled in surgery (using a self-developed method, he could separate the shoulder from the joint in three minutes). Pirogov wrote about him: "Langenbeck was a unique surgeon-anatomist. His knowledge of anatomy was as extensive as his knowledge of surgery ... Indeed, he was a great surgeon."[16]
- Theodor Billroth (1829—1894) – the father of gastro-intestinal surgery (he was the first to perform resections of the esophagus, pharynx and stomach). The author of a book, "General Surgery", which was published in 15 editions and translated into many languages. Pirogov wrote of this book that he "valued it highly"[17].
- Joseph Lister (1827—1912) – the originator of antisepsis who began a new epoch in the history of surgery.
- Friedrich Esmarch (1823—1908) – introduced the method of removing blood from a limb with the help of a bandage he invented (Esmarch's bandage), as well as an original method of shoulder exarticulation. He also invented numerous devices for medical manipulations (Esmarch's irrigator, etc.).

- Alfred Velpeau (1795—1867) – the author of numerous works on topographical anatomy, on practical surgery, on anatomy and pathology of vascular and lymphatic systems, on obstetrics, ophthalmology and other branches of medicine. Pirogov wrote in his "Diary of an Old Doctor" that "Velpeau was the most outstanding among all surgeons in Paris ..." [18]
- Astley Cooper (1768—1841) – the first person to perform the dressing of a carotid artery and to attempt the dressing of the abdominal aorta in a living patient. He wrote a well-known book on surgery. Pirogov wrote in his memoirs: "From Derpt I sent an article to ... a medical journal. The article was on surgical anatomy of inguinal and femoral hernia and was based upon the study of books by Scarpa, J.Cloquet and Astley Cooper." [19]
- Guillaume Dupuytren (1777—1835) – developed and performed resection of the lower jaw for the first time and introduced the use of continuous intestinal sero-serous suture. His descriptions of combined fracture of the lower part of the fibula and the internal part of the ankle (Dupuytren's fracture) and of the pathologo-anatomical changes in palm aponeurosis in finger contracture (Dupuytren's contracture) became classic.
- Auguste Nelaton (1807—1873) – the author of numerous works on surgical anatomy of bones and joints. The inventor of the intestinal clamp, of a sound bullet extraction, of the endoscope for examination of urinary bladder, of the stomach pump, of the rubber catheter (Nelaton's catheter). He published a five-volume guide on surgery and urology which was translated into Russian in 1880.

These data about some of Pirogov's contemporaries demonstrate that Pirogov was by no means the greatest among his peers. Information published by many Soviet specialists concerning Pirogov's alleged discoveries and inventions is also often far from the truth. This can be illustrated by the following examples:

In 1950, Zolotnikov declared without hesitation: "American historians of medicine contort the truth when saying, 'It was America that taught Europe the A-B-C of general anaesthesia'. Irrefutable historical facts show quite a different picture. It was the great Russian surgeon Pirogov who taught American surgeons to use general anaesthesia." [20] Three decades later the same phrase was repeated, precisely, by Lisitsyn [21].

Almost the same approach was taken by Zhorov and Mogilevsky. Zhorov, for example, called Pirogov the founder of modern anaesthesia [22], while Mogilevsky described the first surgical operation that Pirogov performed with the use of ether anaesthesia thus: "It was the greatest event in

medical history. For the first time, a most serious surgical operation was performed painlessly [Author's note: even at that time the excision of a mammary gland with a tumor was far from a serious surgical operation] ... For many decades ... Pirogov remained the only medical doctor in the world who used general anaesthesia ... Following Pirogov, medicine overcame pain." [23]

Ryabov and Mikhelson wrote in the latest edition of the "Big Medical Encyclopedia" that the first period in which general anaesthesia was used was in the years 1842—1847, when Long, Wells, Morton, Inozemtsev and Pirogov "... began to use ether, chloroform and then nitrous oxide without knowing about each other's activities." [24] It is, however, well known that the discovery of the properties of ether, as well as the first use of ether as an anaesthetic, is associated with the names of the American scientists and physicians Long, Jackson, Morton and Warren. The first use of chloroform, in turn, is associated with the English obstetrician Simpson. It is furthermore well known that the first publication about the use of ether for surgical anaesthesia appeared in the newspaper *Severnaya Pchela* on January 15 (27), 1847 (the first surgical operation under ether anaesthesia having been performed in a hospital in the United States state of Massachusetts on October 16 (28), 1846). According to Viksna, the first surgical operation under ether anaesthesia to be successfully performed in Russia was done by B.F. Baerens within the period between January 15 (27) and January 29 (February 10), 1847, in Riga [25]. Shabunin places the first such surgery in Russia on February 7 (19), 1847, performed by F.I. Inozemtsev, and subsequent surgeries by T.L. Vanzetti on February 12 (24); by Pirogov on February 14 (26) and February 16 (28); and by V.A. Karavayev on February 18 (March 2).

As for chloroform, Geselevich states that its first use in Russia was in November 30 (December 12), 1847, by P.A. Naranovich, working in St. Petersburg. On that date Pirogov was in Kiev [26].

None of this, however, diminishes the merits of Pirogov as one of the earliest anaesthesiologists. He performed serious research on the physiological and toxicological impact of anaesthetics on the human organism, thus helping to determine dosages, indications and contraindications and developing various methods of anaesthesia (he was, for example, the first to perform rectal anaesthesia using ether vapors), modifying equipment used in anaesthetics, etc. This fact was recognized not only in Russia but also abroad. The American scientist Robinson has written: "Most pioneers of anaesthesia were mediocre ... Among the very few highest figures ... the greatest, as a man and as a scientist, was Nikolai Ivanovich Pirogov." [27]

It is generally known that a serious medical problem in the pre-antiseptic period of surgery were purulent post-traumatic and post-operative complications. Pirogov's inquisitive mind was put to seeking solutions to this problem. He was forever looking for the causes of the complications and, in summing up his findings, he wrote: "Miasma [Author's note: This was the term for vapors causing diseases used at that time] is not like poison, a passive aggregate of particles acting in a chemical way, but it is something organic, something that is capable of development and renewal." [28] This conclusion was very close to the essence of Lister's doctrine on wound infections, which in turn was based on the discoveries of Pasteur – discoveries which also were known to Pirogov [29]. Yet nowhere in Pirogov's works can one find an understanding of infection based on the work of Lister and Pasteur. Pirogov did not take the last step toward explaining the origin of wound infection. It remained *terra incognita* for him. This fact explains the reserved attitude Pirogov exhibited toward Lister's method of antiseptics. In fact, according to Skorokhodov, it was precisely Pirogov's opinion which delayed introduction of Lister's method in Russia [30]. The ideas proposed by Semmelweis concerning the contact of pyaemia through the infected hands of an obstetrician also fell victim to Pirogov's criticism.

After learning these facts, one cannot help but wonder at reading in Multanovsky's textbook on the history of medicine that Pirogov developed the doctrine "... of infectious origin of wound complications ... and discovered the action of antiseptic drugs." [31] Some books make reference to "Pirogov's antiseptic dressing" or write that Pirogov widely used antiseptic substances in his practice. Pirogov did, indeed, use iodine tincture, potassium permanganate, chlorinated lime, and other substances, but, like many of his contemporaries, he did so only empirically, as these substances were not commonly used at the time. Khazanov's statement that Pirogov was the first to use iodine tincture in surgery [32] has no basis in fact.

In Multanovsky's textbook, in works by Zabludovsky [33], Lisitsyn [34], Bisenkov [35] and Georgievsky [36], as well as in the introduction to the first volume of Pirogov's own works [37], Pirogov is called the "founder of topographical (surgical) anatomy". This statement certainly distorts historical truth. It is well known from the history of medicine that this branch of medicine did not appear in one single instant, nor did it appear through the work of only one scientist, no matter how great. The development of topographical anatomy was a lengthy process to which contributions were made not only by Pirogov, but also by many of his predecessors and contemporaries, including Cooper, Thomson, Hunter, Velpeau, Hyrtl,

Scarpa, Salomon and Buyalsky. As for Pirogov, he contributed only to the development of certain parts of knowledge about topographical anatomy. Pirogov's first biographer, Malis, wrote about this: "Topographical anatomy, which is also known as surgical anatomy ... was a new branch of science at that time; it was developed mainly in France and England, while in Russia and Germany it was virtually unknown. Pirogov based his surgical studies upon topographical anatomy." [38]

The same can be said about Pirogov's contributions toward establishing anatomy as the basis of surgery. According to Lisitsyn [39], Khazanov [40] and other authors, Pirogov was the only contributor to that process. The facts show, however, that contributions were also made by such outstanding representatives of European and Russian medicine as Scarpa, von Walter, Hyrtl, Buyalsky and Salomon.

A similar situation developed in the area of osteoplasty. Pirogov is credited as the sole developer of this technique in the works of Bisenkov [41] and Korneev [42], but in fact Syme, Roux, Baudens, Rklitsky and others were involved, as well.

Pirogov's activities in the spheres of military surgery and the theory of medical support of military structure have been especially overestimated. Yudin wrote the following: "As a military surgeon Pirogov was incomparable; there has been no better military surgeon in any country or any era." [43] Burdenko [44], Maksimenkov [45] and Gorinevskaya [46] considered Pirogov to be the founder of military surgery. Curiously, this view is also shared by more contemporary authors such as Zabludovsky and Mirsky, who authored the entry on Pirogov in the third edition of the Big Soviet Encyclopedia [47]. It is hard to understand why all these authors have completely ignored such great authorities on military medicine as P. Percy (1754—1825) and J.D. Larrey (1761—1842). Percy is known for having developed a system of first aid in the field which organized groups of stretcher-bearers and surgeons so that they might be as close to the field of action as possible. Percy also established the need for incision of gunshot wounds and promoted the idea that during fighting, military hospitals should not be touched by the enemy [48]. Percy's famous book, "Manuel du chirurgie d'armée" was published in Paris in 1792, long before Pirogov's time. Larrey, in turn, was a participant in all of Napoleon's wars. He invented the so-called "ambulances volantes" for medical evacuation and first aid. He was the first to perform exarticulation of the coxofemoral and brachial joints in the field, he developed surgical treatment of thoracic wounds with rib resection in patients with intrapleural hemorrhage, and he authored four volumes of "Memoirs de

chirurgie militaire et campagnes" as well as other well-known books [49]. The authors of the articles on Percy and Larrey in the most recent edition of the Big Medical Encyclopedia have the right to be considered among the founders of military surgery. In his "Military medicine and aid in the combat zone in Bulgaria and in the rear in 1877—1878", Pirogov called Percy and Larrey "fathers of military surgery in our century" [50]. In the same book, he wrote, "Compared to Larrey ... we are all pygmies, for he participated in 26 battles during Napoleon's wars"[51].

Such foreign military medicine specialists as G.Bellingall (1780—1855), W.Detmold (1808—1894), Th.Longmore (1816—1895), F.Gortese (1802—1883), Ch.Bell (1774—1842) and G.Loeffler (1815—1881) were also completely ignored. All these specialists contributed significantly to the development of military medicine. Among important works in this area one may mention "Dissertation on gunshot wounds" by Bell (1814); "On schools of naval and military surgery" by Bellingall (1844); "Grundsätze und Regeln für die Behandlung der Schusswunden im Kriege" by Loeffler (1859), "Guida teorico-practica del medico militare in campagna" by Gortese (1862), "Sanitary contrasts of the Crimean war" and "Treatise on the transport of sick and wounded troops" by Longmore (1863 and 1869, respectively). It is very important that Pirogov used these books, along with many others, when writing his "Fundamentals of general military surgery". What is also significant is that Bellingall, Detmold and Longmore were professors of military surgery.

Many researchers writing studies of Pirogov also insist that he was the first to introduce the use of female nurses in the battlefield. In fact these activities in Russia were mainly connected with the name of Grand Duchess Helena Pavlovna. Pirogov's own words document this fact in a letter he wrote to Baroness E.F.Rahden in February 1876: "And then she [Helena Pavlovna] explained her great plan to organize nurses' aid in the battlefield, and she proposed that I should choose the personnel and direct all activities ..." [52].

There can be no doubt that Pirogov's contributions to the development of the theory and practice of military medicine are truly significant. Moreover, in some spheres of military medicine, especially in organizing the work of medical corps, his can be described as the main contribution. But it cannot be declared that Pirogov laid the groundwork for the system of medical support enjoyed by the Soviet military during World War II. Nevertheless, this very idea was expressed by the head of the Central Medical Direction of the Soviet Army, E.I.Smironov, who in 1942 called the great surgeon and anatomist "the founder of modern military

medicine"[53]. An impartial view, however, notes that in his article on Pirogov in the third edition of the Big Medical Encyclopedia, Smirnov correctly wrote that Pirogov was only one of the founders of military surgery and only one of the organizers of medical support systems in the army. In the same article it is also written that Pirogov was "one of the founders of surgical anatomy and the anatomo-experimental branch of surgery"[54].

Thus we see that studies of Pirogov have their bright spots, as well as their shadows. This article, however, reveals only the brightest spots of light and the deepest shadows. It is too short to consider all the existing shades. In nature, shadows are produced both by living and inanimate objects. In studies of Pirogov, shadows are cast by distortions of reality, by underestimation or overestimation of Pirogov's merits. His merits need neither.

Bertenson wrote in March 1881: "Very few outstanding people, both in the past and in our times, can be compared to Pirogov, for his services to Russia and to science were really great"[55]. Pirogov's talent was, indeed, great, as were his inquisitive mind, his patriotism, his will to discover the truth and his ability to perform hard work. His discoveries and achievements in different branches of medicine were also significant. It cannot be denied that he was the first to use rectal anaesthesia with ether vapors, to use anaesthesia and gypsum dressings in the battlefield, to organize nursing activities in combat. He gave a classical description of traumatic shock, brain concussion, tissue oedema in gas gangrene and of "wound consumption". He developed numerous methods of surgical treatment (Pirogov's osteoplasty, etc.). And he contributed considerably to the development of topographical anatomy, military surgery and medical support of the army.

It is the noble duty of those who study Pirogov now and those who have yet to study his work to cast the beams of historical truth upon the shadows which hang over the image of N.I.Pirogov.

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