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Nikolay Ivanovich Pirogov and his contribution to medicine in 19th Century Imperial Russia

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Chapter 7

Nikolay Ivanovich Pirogov forerunner, co-founder and Inspector-General of the Red Cross

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Abstract

Nikolay Ivanovich Pirogov and Grand Duchess Elena Pavlovna Romanova, sister-in-law of Tsar Nicholas I, shared their ideas to organize and train nurses to care for the wounded at the battlefront during the Crimean war. During this war Pirogov pleaded for the establishment of an international treaty that would oversee the provision of international help, including the use of volunteers, to both civilian and military victims of war, regardless of rank or nationality. Pirogov was forerunner of the International Red Cross, co-founder of the Russian Red Cross and acted as Inspector-General. His contribution was recognized by the International Red Cross.

Introduction

The role of Russia and of the surgeon Nikolay Pirogov[1] in the development of humanitarian aid to the victims of warfare. In this paper we discuss the emergence of neutral organised care to soldiers during times of war. The surgeon Nikolay I. Pirogov (Fig. 1) and the Grand Duchess Elena Pavlovna (Fig. 2), sister-in-law of Tsar Nicholas I and aunt of Tsar Alexander II, contributed largely to this idea. The Crimean War played a pivotal role in this development. This idea of a neutral and well-organized care for the injured and sick during armed conflicts, regardless of rank or nationality, was further developed by medical doctors, individuals with political influence and the Committee of Five. Their efforts would eventually contribute to the establishment in 1863 of the International Red Cross (CIRC) and the national Red Cross societies. We also describe how the early Russian societies for the aid of the wounded were integrated into the Red Cross society in Russia. After the Red Cross formation, as Pirogov was well-advanced in the organization of care for the wounded, acted as an Inspector-General for the Red Cross of deployed care on the battlefield.

Fig. 1. Nikolay Ivanovich Pirogov (1852) In: N.I. Pirogov, Collected work in 8 Volumes. Volume V: Moscow, Gosudarstvennoe Izdatelstvo Meditsinkoy Literatury, 1961, p.10. Military Medical Museum, Defence Ministry of Russian Federation, Saint Petersburg. Reproduced with their permission.

[1] In the text we have used common English transcription. See, for example, Pirogov' for the Russian surname 'Пирогов'. Other transcriptions such as 'Pirogoff' and 'Pirogow' also occur.

Fig. 2. Grand Duchess Elena Pavlovna Romanova, by an anonymous Russian painter. Public domain (according to PD-RusEmpire-www.hillwoodmuseum.org/collection/item/51.117.

From its earliest beginnings the citizens of Russia demonstrated humanity and generosity towards victims of war and armed conflict, whether military or civilian. Ancient literature from the twelfth century onwards describes how women during the period of Kievan Rus', the predecessor of the Russian State, came to the aid of war casualties.[1] During the siege of the Azov fortress (founded by Turks on behalf of the Ottoman Empire, but later recognized Russia's possession) in 1641 women bandaged the injured and brought them food. The noblemen Fyodor Mikhailovich Rtishechev used his money during the Russian-Polish War of 1654 to help the sick and wounded.[2]

The availability of professional healthcare for the majority in Russia increased towards the end of the eighteenth century, thanks to the enlightened views of Tsar Peter I (Peter the Great), his successors and their friends. Peter visited Europe twice and following these visits he introduced several innovations in the healthcare system, especially for war victims, which his successors continued.[3] In 1707 he opened the first Russian medical hospital school in Moscow and along the lines of this hospital he also built hospitals for the army and navy in Saint Petersburg[2].

Peter's motivation was that a healthy soldier was an efficient soldier, hence his focus on medical care for the army and the navy. In 1716 the Tsar himself wrote military regulations in Russian and Dutch, stipulating the number of doctors, surgeons and pharmacists required for the army.[4] Since Peter the Great signed a decree in 1722, each naval hospital had one older woman assisted by other women who were responsible for the hospital linen.[2] Tsarina Elisabeth the Great (1741-1762) ordered already in 1758 that the surviving widows and orphans of doctors, surgeons and pharmacists receive a pension only if they were willing to raise their children for serving the medical care.[3] During the Napoleon War of 1812 the State, private sources and above all the public gave massive aid to the wounded.[2] An example of humanitarianism was the state official, Pavel Pezarovius, who raised 400 000 roubles to help hundreds of war invalids and evacuate 20 000 sick and wounded from Moscow to private homes, where they were cared for. So, Russia had a long tradition of helping war victims. During the second half of the nineteenth century military surgeons, private individuals and humanitarian organizations exerted an increasing influence on governments in Europe. Their efforts contributed to the establishment of the International Red Cross and Red Cross societies in countries world-wide. The surgeon Pirogov played a crucial role in this development.

The surgeon Nikolay Ivanovich Pirogov

Nikolay Ivanovich Pirogov (1810-1881) entered, as a medical student, the University of Moscow in autumn 1824 still 13 years old.[5] After graduating in May 1828 he was sent on a state scholarship to the prestigious postgraduate Balto-German university of Dorpat to specialise in surgery and applied anatomy. From 1833 until May 1835 he continued his education in Germany in Berlin and Göttingen, before returning to Dorpat where he was appointed by his former mentor, Professor Moier and Rector of the Dorpat University, as full professor of theoretical, operational, and clinical surgery and director of the Surgical Clinic.

In March 1841 Pirogov was appointed Professor of Surgery and Applied Anatomy at the Medico-Surgical Academy (since 1881 the Military Medical Academy) and Chief Surgeon of the Second Landforce Hospital with 1000 beds in Saint Petersburg. This appointment came together with the post of director of a factory manufacturing medical equipment and also with the post of Secretary for the Imperial Academy of Sciences. During this time he developed managerial skills that would later prove invaluable during the Caucasian and especially the Crimean Wars.

[2] Saint Petersburg was the capitol of Imperial Russia till 1917.

Network of individual doctors of the military medical services

The establishment of the Committee of the International Red Cross did not happen suddenly. The time had come to make this appeal to the conscience of the peaceful people in countries. Many families had sons under arms.[6,7] In the forties and fifties of the nineteenth century many small and big conflicts arose in Europe. These conflicts in combination with the network of the medical staff, the connections of the nobility in Europe and Russia, and their intertwining led to an environment that favoured the established of first the 'Committee of Five', then renamed to the 'International Committee for the relief to the Wounded'. The Red Cross movement developed rapidly and was in 1876 definitive renamed to the 'Committee of the International Red Cross'. We will discuss five of these conflicts.

Caucasian War 1847

Nikolay Pirogov first became involved in military surgery in 1847 during the Caucasian War, a consequence of a long lasting Russian invasion (1817-1864) of the Caucasus. Tsar Nicholas I sent Pirogov to the warzone to demonstrate the use of the new technique of ether on the battle field.[8] Pirogov had experience of anaesthesia in his practice and considered its use equally or even more necessary during war conditions He felt that those who risk their lives for the homeland, with the chance of losing limbs, should not have to suffer any additional pain. He used anaesthesia '*…to alleviate the fate of those unfortunates who condemned losing one or more members, not so much because of the seriousness of the injury, but because of the various adverse conditions due to the nature of war*.'[9]

He was interested not only in the outcome of surgery in combination with anaesthesia, but also in the hygiene of the troops, the effects of the climate, food and other factors that caused the fevers and epidemics that killed more soldiers than bullets. During this conflict Pirogov and his colleagues treated Russian soldiers, Caucasian rebels and prisoners with equal care. Pirogov put his experiences during the Caucasian War to good advantage during the Crimean War.[10] Because of *'... his pioneering work in military medicine and surgery and his concern for the amelioration of the condition of the wounded and sick in armies in the field*.'[11] Pirogov was named '*…a forerunner in the struggle for humanitarian rules that was to result in the signature of the First Geneva Convention and the founding of a Red Cross Society in Russia*.'[11] This was seven years before the Crimean War, and seventeen years before the Convention of Geneva.[10]

The Sonderbund War

The Sonderbundskrieg was a short Swiss religious civil war. The conservative Catholic mountain cantons of Luzern, Uri, Schwyz, Unterwalden, Zug, Friborg and

Wallis, united in the Sonderbund, reacted to the liberal Protestant cantons, intended to introduce anticlerical legislation under the leadership of Zurich and Bern.[12-14] After a short-lived war from 3 to 29 November 1847, with ninety-three deaths and 510 wounded, the Sonderbund were defeated. The supreme commander of the Swiss army with the highest rank as general in wartime was Guillaume-Henri Dufour. He first served in the French army from 1811 till 1817 to help to defend the French Empire. Where he since 1814 was added to the general staff. In 1859 during the Austria-Sardinia War, during which the battle of Solférino took place, Dufour was appointed again the supreme commander of the Swiss army.

The Crimean War

The Crimean War, which lasted from October 1853 to February 1856, arose from a conflict between Russia and an alliance between the Ottoman Turks, the French, British and the kingdom of Piedmont-Sardinia.[15,16] (Fig. 3) The immediate cause involved the rights of Christian minorities in the Holy Land, which was a part of the Ottoman Empire. The French promoted the rights of Roman Catholics, while Russia

Fig. 3. Historical map of the Crimean War 1854-1855, pen and ink drawing, artist Elena Borzenko, Saint Petersburg, 2016. Private collection, with permission.

promoted those of the Eastern Orthodox Church. The large numbers of casualties and miserable conditions forced for organization of nursing care.[15] Pirogov, remembered that he in 1837 in Paris saw how women were employed in hospitals to take care of patients. This also inspired him to develop a professional aid role for Russian women in the health care system. This came to full fruition during the Crimean War.[17]

The siege of Sevastopol was the final major battle during the Crimean War. The grounds around the city became the main battlefield, where the Russian army suffered huge losses; 225 500 killed and more than half a million wounded. At the beginning of the siege Pirogov requested to be sent there, only to come up against a bureaucratic brick wall. Eventually, Grand Duchess Elena Pavlovna interceded on his behalf with her brother-in-law Nicholas I. Pirogov was appointed by the Tsar as the overall head of the army medical services. This was something completely new in Russian history. He would not only work in his capacity as a surgeon, but perhaps even more importantly as an organizer of medical facilities. He was convinced that successful treatment of mass casualties depended as much or even more on good management as on the skill of the surgeons.[15,17,18] In October 1854 Pirogov arrived in Sevastopol. The medical situations was catastrophic. Typhus patients, gangrene patients and patients, who had underwent surgery, were nursed adjacent to each other in the same rooms. He also noticed a severe shortage of virtually everything; beds, medical equipment, dressings and medication. Because of the large numbers of casualties, the major priority for Pirogov was to start as soon as possible a total management reorganization including among others treatment procedures and the nursing care.[15,17] The latter was something he and Grand Duchess Elena Pavlovna had discussed before Pirogov left for the Crimea. At that meeting the Grand Duchess announced she had a plan for just such a contingency, namely the establishment of sisters of mercy who could be sent as nurses to the war zone.[18]

In the autumn of 1854 Grand Duchess Elena Pavlovna founded, at her own expense, the Exaltation of the Holy Cross Community of nurses and made an appeal to Russian women to train as nurses to care for the wounded and the sick victims of the war. Her Mikhailovsky Palace in St. Petersburg became a military centre and back office. The ladies-in-waiting took on duties as seamstresses, making uniforms for the nurses. They answered also all sorts of questions about the wounded and the sick put to them by family as just the Red Cross is doing nowadays. The staff received contributions for the war effort including drugs, bandages and linens, and many cash donations.[19,20] The establishment of the old and new nursing Societies and

Communities was the most important step in the development of medical education for women in Russia. Pirogov and his team of doctors trained the volunteers in the skills they would need in the Crimea; how to carry out day and night duties, to bandage, to assist to change patient's bandages during ward rounds, to assist in operations, to care for the patients after surgery, and how to distribute them among the various military hospitals. After arrival to the Crimea their training continued. [21-23]

In November 1854, the first group of nurses arrived in the Crimea, followed shortly thereafter by a regular flow of new female staff.[21,24] Most of the nurses were well educated, they spoke several languages, They even interpreted for the wounded foreign prisoners. The field hospitals and first aid stations received about 7 000 up to 13 000 injured depending on the heaviness of the battles. Each nurse cared for 100 to 200 wounded and their assistance under especially extreme situations was invaluable.[15] Some of the nurses died. The workload was excessive, many nurses became exhausted and caught infectious diseases. Twelve nurses committed suicide because they were no longer able to perform their work.

Because of an acute of doctors, the Russian government was forced to recruit doctors from Germany and America.[15,25,26] Pirogov had access to approximately thirty young American doctors, who had learned about this opportunity from advertisements placed Tsar Nicholas I's envoys. Most of them were doing postgraduate studies in Paris. After returning to the United States the American doctors used newly acquired learned skills in their own practices in the hospitals of the American Civil Wars.

By March 1855 Pirogov had enough nurses to allow him to take over the overall management of all first aid posts and hospitals.[15] Pirogov worked mostly in the main dressing station, the building of The Noble Assembly in Sevastopol, but he also regularly visited the first aid posts and hospitals on the Crimea. He divided the voluminous complex work force organization. The female auxiliary staff became bandage masters helping surgeons; pharmacy assistants preparing drugs and supervising their distribution; and housekeepers taking care of clean linen and the sick. The nursing staff supervised the doctors, the administrative military staff and the distribution of drugs, clean linen and food. They also kept an account of the personal belongings and money of the soldiers, given to them for safe keeping. To deal with the massive influx of injured, Pirogov introduced the use of triage developed by the French military surgeon Dominique-Jean Larrey for the management of mass casualties. Because of an acute shortage of hospitals Pirogov

was forced to use farm huts, wooden barracks and military tents. He quickly understood that air flow in the tents and barracks, and sorting patients by diseases was very helpful also from hygiene point of view. In the spring of 1855, the fighting intensified and the management changes introduced by Pirogov now improved their worth.[8,15,17]

When Alexandre II, who in the Spring of 1855 had succeeded his father Nikolay, visited the hospitals on the Crimea he was very moved about what he saw there. In September 1855 he started peace negotiations to end the hostilities and on 18 (30) March 1856 the peace treaty was signed in Paris. After the peace agreement the nurses received awards, such as the gilded cross and bronze medal. They returned home, where they continued their nursing work in military hospitals.[17,23]

During the Crimean War Pirogov made a plea for an international treaty to guarantee the safety of volunteers who provided aid to war victims on the battlefield, regardless of rank or nationality.[2,19] Later, others would make similar pleas. In 1861 the French pharmacist Henry Arnault pleaded for an alliance between sovereign states to inaugurate neutral medical services, that would allow surgeons to treat the wounded and sick on the battle field irrespective their nationality rather than abandoning them.[12] In contrast, the Italian physician and Dr. Ferdinando Palasciano, who fought in the Bourbon army against the Risorgimento riots of 1848, stated that he did not believe that units of voluntary helpers could solve the problem. Like Florence Nightingale he was convinced that the State should only care for their own war-wounded.[12,27]

The French, Sicilians and the British also used women as nurses. The influential British newspaper The Times published news from the Crimean War, including details about the miserable conditions faced by the wounded and sick. Under pressure from the public, the Secretary of War, Sidney Herbert, asked nurse Florence Nightingale (1820-1910) to go to the Crimea to organize humanitarian aid to the wounded.[2,16,28] She arrived on 4 November 1854 in Scutari (now Üsküdar), a suburb of Constantinople on the other side of the Black Sea 625 kilometres from Sevastopol, with the first group of thirty-eight women. More groups arrived later. These included nuns and other women with little or no experience in nursing, but the majority were working-class hospital nurses. Under the British military doctors, Nightingale and her small group of nurses enjoyed little authority. Even worse, the military called her a dangerous spy, because she was considered a friend of the Minister of War. However, despite the difficult conditions under which she had to work and the opposition which she experienced, her strong

character allowed her to accomplish the task she had been given. The British nurses never nursed on the battlefield nor treated the wounded of the enemy.

The quality of the care for the wounded by the Russian aid in the Crimea was recognized by Florence Nightingale. In her *Subsidiary Notes as to the Introduction of Female Nursing into Military Hospitals in Peace and War* published in 1858 she wrote '*...It remains to mention the Russian system, which, as regards the organization of the duties of the "sisters" appeared to me by far the best I have known...*'[29] In the House of Commons two army officers reported that Russian nurses had only insignificant duties in the hospitals on the battlefield. Nightingale corrected them and stated that '*…the Russian system seems to be the only perfectly organized system of female attendants in military hospitals, that was developed in the Crimean War...*'[29] She explained that the nurses were in charge of all that related to the bedside care of the patient. They received orders from the medical officer, attended him in his rounds, conferred with him afterwards and communicated with the feldshers or dressers. Nightingale stated that the Russian organization appeared to be the nearest approach to good organization she had ever encountered.

Battle of Solférino 1859

The battle of Solférino and San Martino, in the northern Italian town of Solférino, was the decisive battle in the Second Italian War of Independence between Austria and an alliance of France, Italy and Piedmont-Sardinia.[30,31] It took place on 23-26 June 1859 and resulted in the victory for the allies. It was the last major battle in world history where all the armies were under the personal command of their monarchs. After the battle, the Austrian Emperor refrained from further direct command of the army. A Swiss surgeon, Louis Appia (1818-1898), took part in the battle. With his brother George, a pastor, he wrote letters to Italian and French doctors to collect necessary materials and to Swiss friends for fund donations. There Louis Appia met with the Swiss army general Guillaume Henri Dufour and with the head of the French military medical service, Hyppolite Larrey (son of Dominique Larrey), but also with Henry Dunant, a Swiss humanist and social activist. Also another Swiss surgeon, Théodore Maunoir a friend of Appia, and the Italian general and nationalist, Giuseppe Garibaldi, participated in this battle for freedom.

Jean Henri (Henry) Dunant, a Swiss businessman, writer and social activist, arrived in Solferino on the evening of 24 June 1859, hoping to meet Napoleon Bonaparte to discuss a business problem he had in Algeria. However his arrival coincided with the final stages of the battle allowing to its awful aftermath, where in a single day,

about 40 000 soldiers on both sides died or were left wounded on the battlefield. He was horrified and greatly moved by the terrible suffering of the wounded soldiers left on the battlefield, and the near-total lack of medical attention and basic care. For several days he helped to treat and provide assistance for the wounded, organizing aid and providing money to buy provisions and other necessities. It was three years after the battle before he could bring himself to write about his experiences and observations. In 1862 he published in French his book *Un souvenir de Solférino*.[32] As he described in his book '*...The stillness of the night was broken by groans, by stifled sighs of anguish and suffering. Heart-rending voices kept calling for help. Who could ever describe the agonies of that fearful night...*'[32] Even then some of the scenes he witnessed were of '*…horrors yet more ghastly than those here described, and which the pen absolutely declines to set down...*'[32] But he also wrote of the many great acts of kindness shown to the wounded, irrespective of nationality, by the inhabitants of the surrounding villages and towns. Finally he called for international treaties to guarantee the neutrality and protection of those involved in armed conflicts, whether military of civilian and including medical and nursing personnel. He put this as a question to his readers: '*...Would it not be possible, in times of peace and quiet, to form relief societies for the purpose of having care given to the wounded in wartime by zealous, devoted and thoroughly qualified volunteers...*'[32]

But this is indeed what Pirogov and Grand Duchess Elena Pavlovna had achieved several years earlier during the Crimean War. In his book Dunant did acknowledge the work of Elena Pavlovna and Florence Nightingale during the Crimean War but made no mention of the enormous contribution made by Pirogov. About the Russian nurses who worked at the Crimean battlefront Dunant wrote '*…où elles furent bénies par des milliers de soldats russes…*' ['*…where they earned the blessing of thousands of Russian soldiers…*'] [30,32]Together with the medical staff the nurses worked directly under shellfire on the peninsula in hospital and private houses.[17]

Expedition against Rome, the Battle of Aspromonte

On 29 August 1862, during the battle of Aspromonte, part of the Italian War of Independence the Italian general, politician and nationalist Giuseppe Garibaldi was shot in his foot. The doctors Di Negro, Palasciano and Bertani took care of Garibaldi, who was worldwide well-known and recognized. For two months these experienced surgeons could not decide whether or not the bullet had settled in the bone. They could not agree on his treatment, and asked Nikolay Pirogov for his help. He had experience with gunshot-wounds and was highly respected by his colleagues.[8,15] He arrived together with the English surgeon Dr Partridge in the

city of La Spezia at the end of October. Pirogov quickly diagnosed that a bullet was located at the lower part of the tibia and fibula and prescribed the appropriate treatment in a protocol. After another six weeks, the diagnosis of Pirogov proved to be the right. The patient had made a full recovery and Pirogov received a warm letter of thanks from Garibaldi.

In 1863, seven years after the end of the Crimean War, Pirogov wrote his [*Broad guidelines for general war surgery, according to reminiscences from the wars in the Crimea and the Caucasus and from the hospital practice*].[15] He waited so long with this publication as a result of his traumatic experiences in the war. Because war sentiments waved around in Europe, he felt compelled to write a book as a manual on war medicine and surgery as he had noticed '*…that not only Russian doctors but also foreign doctors (German and American) did not know the ABC of surgery. And other publications did not justify to the facts…*'[15,17] His book became the standard reference for the next ninety years and was widely considered to have made a major contribution to the organization of citizens who volunteered to provide assistance to the casualties of war.

People with political influence, who took up the plea for an international treaty

Henry Dunant's heart-rending account of the terrible aftermath of the battle of Solférino, so vividly described in his book *Un Souvenir de Solférino,* which was translated soon after its publication into many different languages.[6] It touched the imagination of the common reader and resulted in worldwide cries of indignation from around the world.

It was sent to leading political, military figures and other influential individuals in Europe, including Elena Pavlovna. He also visited many of them to make them aware of the purpose of his proposed institution.[6] Henry Dunant had lunch on 14 September 1862 in Potsdam with De Semonov, counsellor to the Russian Court. De Semonov informed him about the interest of Grand Duchess Elena Pavlovna in his book and after having read it had sent aid to Poland during the revolt. The Grand Duchess invited Henry Durant for a meeting, which took place in August 1863 at Ouchy and Bocage on the shores of Lake Geneva (Lake Leman), Switzerland.[31] She promised him to interest her nephew, Tsar Alexander II, in the idea of national institutions that would provide assistance on the battlefields during wartime. Another Russian Grand Duchess the later Queen of Württemberg, Olga Nikolaeva Romanova, daughter of Tsar Nicholas I and sister-in-law of Elena Pavlovna met twice with Dunant.[31,33] Grand Duchess Olga was the first among all the princesses and queens, who turned the not yet realized idea of Dunant already in

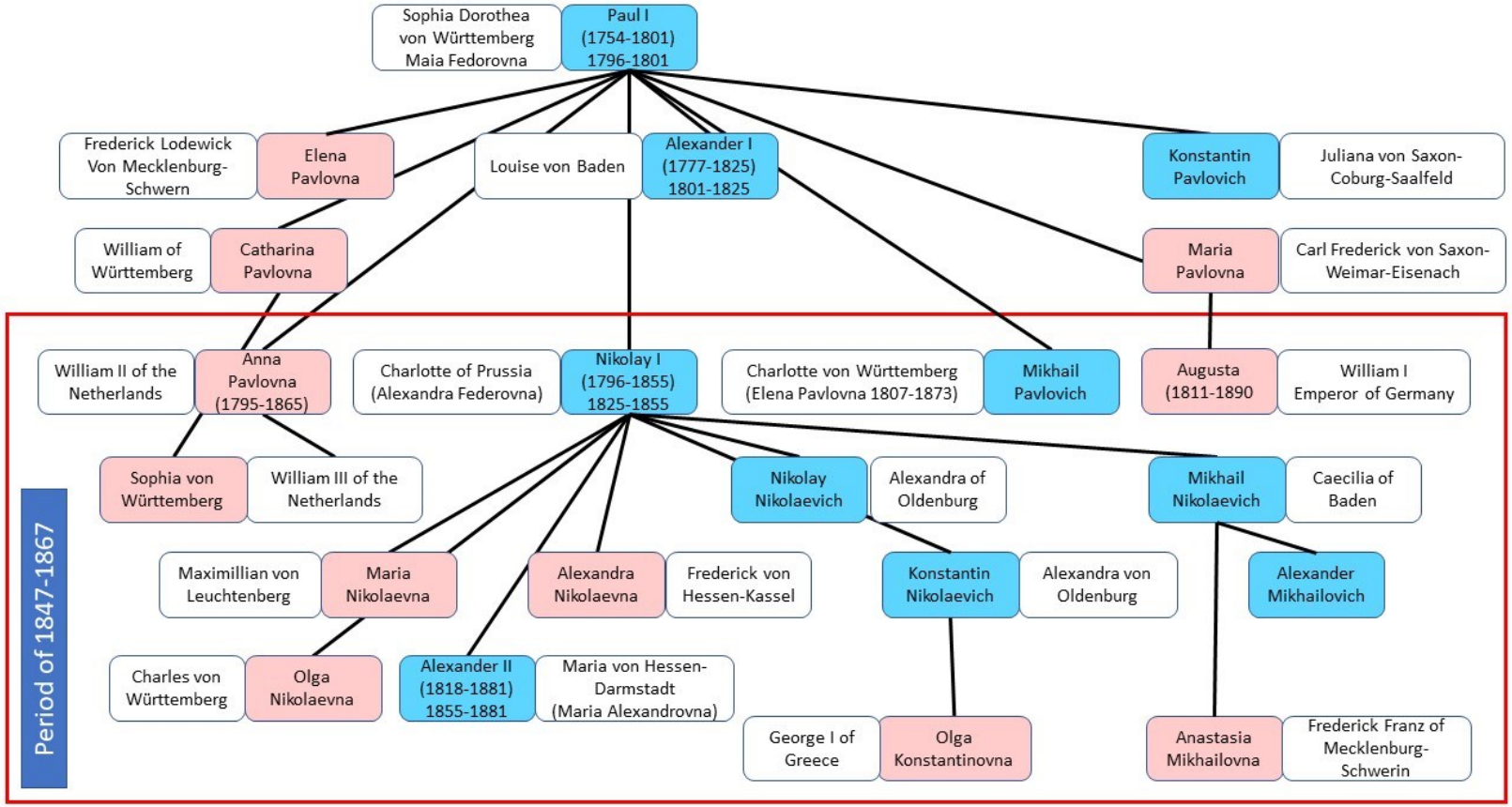

Fig. 4. Family tree of the House of Romanov during the period 1847-1867. First author is owner of this figure.

1862 into an established foundation for human aid named 'Society for men and women'.[31] Both Grand Duchesses of the house of Romanov were in first or second line related to Duchies and Kingdoms in Europe. Their commitments in late 1862 and beginning 1863 influenced their relatives in Europe and accelerated the process. Their examples soon were followed by the Kingdom of the Netherlands, the House of Hessen, the House of Prussia, the Kingdom of Saxony, the House of Baden, the House of Mecklenburg-Schwerin, the House of Saxony-Weimar, the House of Oldenburg, those of Ostgoland, the kingdom of Sweden, the Kingdom of Belgian, the Duchy of Brabant, and the County of Flanders.(Fig. 4)

Committee of Five later renamed to the International Committee of the Red Cross

The publication of Dunant's book is considered to have been a decisive factor leading to the foundation of the International Red Cross (ICRC). The lawyer Gustave Moynier made the book and Dunant's proposals the main item on the agenda of meeting of the Geneva Society for Public Welfare on 9 February 1863, of which he was the President. A five-person Committee chaired by Moynier and with Dunant one of the key members was formed to investigate the possibility of their implementation. It became appropriately called the "Committee of Five". The other members were the Swiss army general Guillaume-Henri Dufour and the Swiss surgeons Louis Amédée Appia and Théodore Maunoir.[7] Their first meeting on 17 February 1863 is now considered the founding date of the International Committee of the Red Cross although the committee did not adopt that name until 1876. However, within eight days of their first meeting it was decided to rename the committee "International Committee for the relieve to the Wounded". The main purpose of the committee was '*…to provide immunity to the medical staff to accomplish their duty without interruption or interference, irrespective of the changing fortunes of war...*' Surprisingly, in the minutes of the committee there is no mention of Nikolay Pirogov since the shared ideas of Pirogov and Elena Pavlovna were an important factor in developing Red Cross societies internationally and in Russia.[19,24]

In October 1863 the Committee of Five organized an international conference in Geneva (the first Geneva Convention) which effectively marked the launch of the Red Cross movement. It was attended by delegates from eighteen national governments plus representatives from four philanthropic societies [the German Johanniter Orden and three Swiss social institutions].[12] Russia was among the first countries to support the objectives of this conference. The Russian delegation included Captain Aleksander Kireyev, adjutant of Grand Duke Konstatin. Grand

Duchess Elena Pavlovna sent her librarian, Essakov, as an observer to the conference.[31] During the conference committee member Dr. Appia chaired a meeting with the seventeen physicians present at the conference. He outlined the importance of the medical service as a counterbalance to the military. As Pierre Boissier put it: '*...The blood let by the one was staunched by the other...*'[31]
During the conference two letters were read.[12] The letter of Prince Demidov, state counsellor and chamberlain of the Russian Tsar, drew attention, to the fate of prisoners of war. He recommended that they be provided with assistance and allowed to receive messages from their families in order to keep up their morale. In the other letter from General Count Dmitry Alekseevich Milyutin, Russian Minister of War, the General regretted that there was insufficient time to send an official representative of his government, the more so because Russia wanted to introduce an army medical service active in times of peace as well as during war. The count expressed his personal sympathy for the project from a charitable point of view but wanted to avoid completely anything affecting international law as that should be left to the initiative and the competence of government bodies.

On 29 October the proposals of the committee, based on the suggestions of Henry Dunant, were approved. The final resolutions of the conference contained the following articles:

- The establishment of national relief societies for wounded soldiers;
- Neutrality and protection for wounded soldiers;
- The utilization of volunteer forces for relief assistance on the battlefield;
- The organization of additional conferences to enact these concepts in legally binding international treaties.

Soon after this conference many national Red Cross Societies were formed. During the conference the delegates recognized that the volunteers could be in danger of their lives in battle zones unless they could be readily identified as non-combatants. Accordingly they decided that volunteers should wear an armband with a distinctive identifying emblem. The emblem chosen was a red cross on a white background, the reverse of the Swiss national emblem of a white cross on a red background, so chosen as it honored the Swiss, upon whose soil the conference was held. Later, in Muslim countries, the Red Cross would become the Red Crescent.

The development of the Russian Red Cross

In Russia the idea of a voluntary committee along the lines suggested by the Conference of Geneva in October 1863 gained momentum. The first meeting of the Russian Red Cross was organized on 14 December 1866 by F.Ya. Karel, court physician and privy councilor to the Tsar, and the baronesses M.P. Frederiks and

M.S. Sabinin, ladies-in-waiting to the Tsarina.[34] The main office was in Saint Petersburg. On 15 December Tsarina Maria Aleksandrovna accepted the patronage of the Society. On 17 February 1867 Nikolay Pirogov was appointed as Privy Councillor to the Russian Red Cross and the Tsarina and is mentioned in the minutes as one of the original founders of the Society.[34] On 30 April 1867 the statute was finally approved by the members, who's number steadily increased to 218. The Russian Red Cross also got the blessing of the High Metropolitan of Moscow, Filaret and Tsar Aleksander II approved the final statute on 3 May 1867.[34] In the same year Alexander II also signed the Geneva Convention. On Russia's initiative, an International Conference was convened in St. Petersburg in October 1868, during which a declaration, known as the Declaration of St Petersburg, was accepted prohibiting the use of expanding bullets during armed conflicts.[34] This ban was extended by The Hague Convention of 1899, initiated by the Russian Tsar Nicholas II and his foreign minister Count Mikhail Nikolayevich Muravyov. It was the first multilateral treaty to address the conduct of warfare, including specifying the treatment of the wounded and prisoners of war.

The Berlin Conference of the Committee of the International Red Cross (CIRC)

The Berlin Conference took place from 10-14 (22-26) April 1869. The president of the Russian Red Cross, General Adjutant Aleksander Karlovich Baumgarten, was appointed secretary for the main committee. The second day of the conference began with a presentation reports from the various national societies affiliated to the CIRC. The first presentation was by General Adjutant Baumgarten, who described how nurses of the nursing Communities established by Grand Duchess Elena Pavlovna were obliged to keep a diary detailing all the requirements of the injured or sick soldiers. The heads of these Communities passed that information on to the Grand Duchess, enabling her to form a complete picture of the state of the care for the victims of the war. He also said that within three to four months of the establishment of the Russian society local committees had been formed throughout whole Russia including ones in Siberia and the Caucasus.[34]

Pirogov as Inspector-General for the Russian and International Red Cross

Following on from the Berlin Conference the Russian Red Cross decided to send an authorized representative to the Franco-German War in Alsace and Lorraine.[34] At a meeting of the Society on 11 September 1870, Nikolay Pirogov was appointed as their representative. During the meeting he noted that one of the most important but difficult tasks was the organization of aid posts for the victims in a warzone. He recommended the establishment of as many ambulatory mobile hospitals as possible

and to take the initiative to design and erect hospital barracks. He had in mind the Asian yurt (a portable, round tent covered with skins used as dwelling by nomads in Central Asia) as it can be erected quickly. As an example, he gave the commissioning of hospital barracks close to Sevastopol during the Crimean War. Such a system was unknown by the French and British forces at the beginning of the war, but they later adapted the Russian system of barracks and mobile military hospital tents. Pirogov also mentioned that the Americans had introduced this barrack system on a large scale during the American civil War.

On 13 September 1870, Nikolay Pirogov as official Inspector-General of the Russian Red Cross, of the Russian Ministry of Internal Affairs, and also on behalf of the Association for the Care of Sick and Wounded Soldiers left with Dr. Bertenson, one of his former pupils, for the war zone in Alsace and Lorraine. Before he left he visited Tsarina Maria Aleksandrovna.[35] She asked him to report also to her as she wished to be kept informed about the impact of private support for military health care facilities. The Tsarina and Grand Duchess Elena Pavlovna provided Pirogov and his companion with the necessary documents, letters and certificates of legitimacy, which would allow foreigners access to facilities at the battlefield.[35]

The Russian Red Cross provided Pirogov and Bertenson also with a letter of authorization headed with the Red Cross symbol, so they could prove the purpose of their journey to the chairman of the International Committee in Berlin, Mr. Von Sydow, and to the other foreign authorities. After their arrival in Berlin and having showed their credentials to Mr. Von Sydow, they learned from him that they also needed the permission of the Prussian Ministry of War to visit the field hospitals and the war zone. Its medical department told them, that only the King could give this permission to foreigners. Von Sydow had at the request of Pirogov, arranged an audience with Queen Augusta of Prussia, the niece of Elena Pavlovna. This request was granted within twenty four hours and Pirogov presented their credentials to the Queen. She mediated on their behalf with the King, who provided the required permission. To avoid any further delay in Pirogov's departure they were also provided by Duke Ujest (Ujazd) of the Order of St. John with their legitimation and even more important with cards with the Red Cross, - green ones - for a free journey, and yellow ones (which were not used) - for free provisions. Finally he was also given a white bandage identified with the Red Cross symbol, to be worn on the left arm. [35]

Pirogov's task during this conflict was to report on five main areas:

- To what extent was the application of the international philanthropy, of which the 'Red Cross Society' is an expression, actually implemented?
- What were the relations between private international assistance and the military administration, and what impact did private assistance have had on the fate of the sick and wounded during the course of the war?
- With the current methods of warfare, how much had the situation of the wounded improved on the battlefield and immediately thereafter?
- Prior to the Crimean War the standard surgical procedure was immediate amputation of injured limbs. Pirogov had introduced a wait-and-see treatment which had avoided the need for amputation in many cases. He was interested in how far this approach was successful during this conflict.
- How can the lessons learned from this war be applied by the Russian military medical service and by those providing private assistance to the wounded and sick?[35]

In a period of five weeks, Pirogov visited up to seventy military hospitals in France and Germany and met many foreign physicians. He was particularly pleased that old friends, as well as young doctors from Germany, France, Great Britain and America, showed him everything that in their opinion needed attention. They were interested in his experiences during previous conflicts. In Strasbourg the Elsassian surgeon Gergot showed Pirogov an infirmary and pointed in the dressing ward to the damage to the ceiling and floor caused by a bomb. He complained about the barbarism of the besiegers, who had attacked the hospital, ignoring the Red Cross flags. Pirogov smiled as he recalled how French bombs had damaged the Russian dressing station in Sevastopol during the Crimean War.[19]

He recorded his findings and conclusions in a Russian report to the Russian Red Cross [*Report on the visit to the military - sanitary facilities in Germany, Lorraine and Elsa in 1870*][35] In his report he made the case for the formation of organized assistance for the wounded in the theatre of war, drawing parallels between the results of the treatment of the wounded in the hospitals of the Germans and the French and the more effective results of the Russian doctors during the Caucasian conflict and the defence of Sevastopol during the Crimean War.[36] Pirogov had collected a lot of information about the hospitals, he had visited in Germany and France, to which he had looked at in his usual scientific and impartial manner. In his report it becomes obvious that the Red Cross movement was in its infancy. He emphasized that particular attention should be paid to regulations and its compliance, well-to-do management whit attention to where, how, who and with

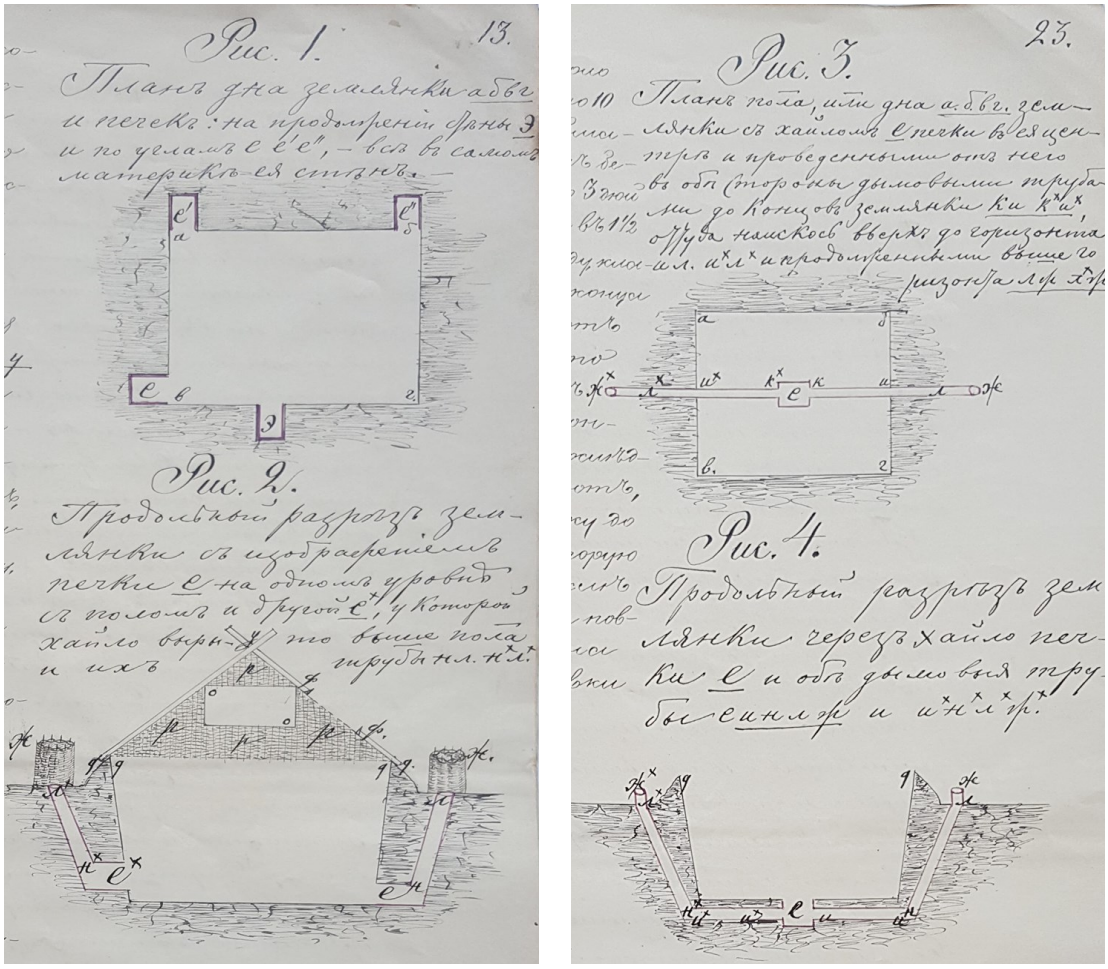

Fig. 5a and 5b. Pit holes in the ground as living spaces for a fast moving army, designed and drawn by Nikolay I. Pirogov in 1877-1878. FR III-23, pp. 44 and 48, in the Fundamental Library of the Military Medical Academy named S.M. Kirov. Public Domain.

what material participants should be deployed. He also gave advice and directions for nursing associations and for humanitarian activities. Pirogov was much respected as a surgeon internationally and he was asked to give permission for the report to be translated and published in German to enable to reach a wider audience. [35] At the annual meeting of the Committee of the Russian Red Cross on 5 December 1870, it was unanimously approved to award Nikolay Pirogov with honorary membership as a token of their deep gratitude for his work on behalf of the Committee.[34]

The Russian Red Cross was active both in Russia and abroad.[37] In 1871 the nurses of the Red Cross for the first time took part in war expeditions to Kuldza (Latvia) and Urga (Mongolia). In 1876 two communities of the Red Cross worked in Cernogoria (Ukraine).

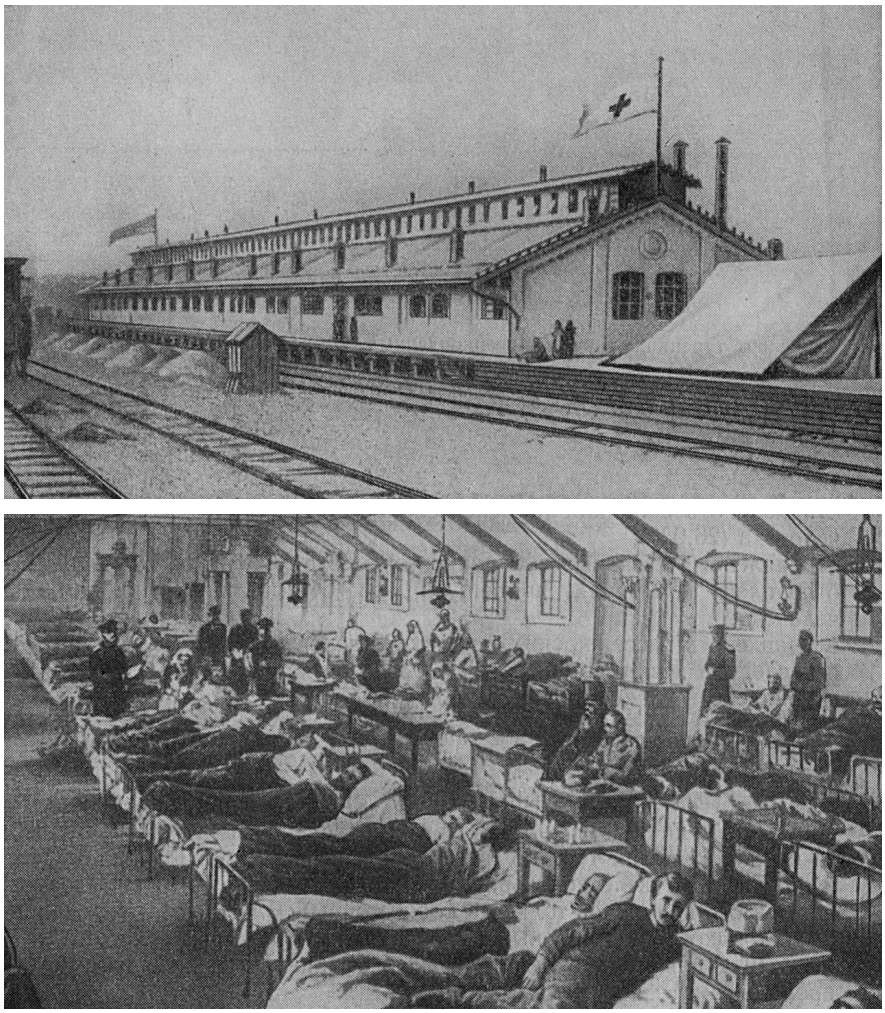

Fig. 6a and 6b. 1 Evacuation point in Yassy. 2 Interior of the evacuation point in Yassy, in N. Abaz, (*The Red Cross in the rear of the operating army in 1877-1878, Vol.1 – 2, p. 567*), St. Petersburg 1880 - 1882, p. 566. Military Medical Museum of Defence Ministry of Russian Federation, Saint Petersburg. Reproduced with their permission.

During the Russo-Turkish War also known as the Balkan War 1877-1878, a conflict between the Ottoman Empire and a coalition of Russia, Bulgaria, Serbia and Montenegro, another Red Cross community travelled to Serbia to provide nursing care for the wounded and sick.[37-39] On 22 September 1877, the Russian Red Cross asked Nikolay Pirogov, now 67-year-old, to report on the Balkan War. He visited dressing stations and hospitals in Romania and Bulgaria, investigating their procedures for organizing care for the wounded, for evacuating patients and for staff circumstances. He also took time to instruct doctors how best to manage patients with burns. He observed the work of nurses, noting how they went about caring for

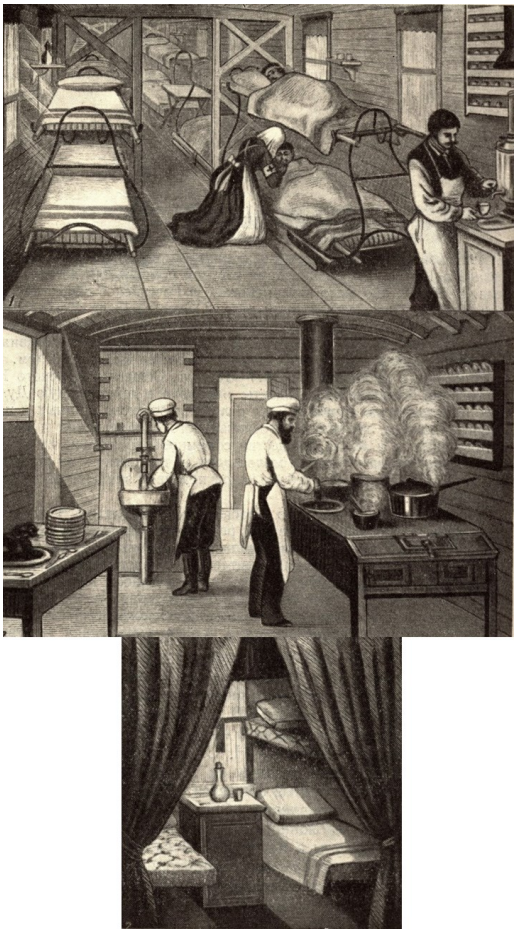

Fig. 7. Interior of the hospital train railway infirmary of the Russian Red Cross.
1 Interior of a railway carriage for the wounded soldiers.
2 Kitchen in the hospital train.
3 Interior of the officer's carriage, in N. Abaz, (*The Red Cross in the rear of the operating army in 1877-1878, Vol.1 – 2, p. 567*), St. Petersburg 1880 - 1882, p. 567. Military Medical Museum of Defence Ministry of Russian Federation, Saint Petersburg. Reproduced with their permission.

patients. Finally, he drew serious attention to any shortcomings in the organization of the care for injured military personnel and civilian casualties of the war.

In one of the dressing stations visited by Pirogov several of the doctors had been students of his. He noted with satisfaction that the organization and the treatment of wounded soldiers reflected what he had taught them. He could not fail to see, however, that the general conditions in the dressing station fell below the standards he expected.[36] During this war Pirogov designed pit holes in the ground as living spaces for a rapidly moving army.(Fig. 5a and 5b) Pirogov's report to the Red Cross on the Balkan War was published in Russian within eight months after being

delivered to the Red Cross and in German in 1882 [*The warfare, the sanitation service, and the private aid on the battlefields in Bulgaria and in the back of the operating Army 1877 – 1878*].[40]

During the Balkan War the nurses of the Communities of the Exaltation of the Cross, the Holy Trinity and Pokrovskaya operated independently of the Russian Red Cross in the barracks in Yassa (Romania).(Fig. 6a and 6b) They cared for the wounded in first aid stations and in trains that were not specially equipped for this purpose, often in areas where epidemics such as typhoid, dysentery and malaria were prevalent.(Fig. 7) The typhus epidemic infected almost all the nurses, and although it is difficult to imagine, they continued to care for their patients.[37] In Adrianopol (a European part of Turkey) there were only eight nurses to care for 4 000 patients. Despite suffering from typhus the nurses at the evacuation point and ambulance transport continued to perform under an extremely heavy workload. One nurse, sister Lebedeva, saved a wounded soldier by allowing the surgeons to transplant skin from both her upper arms. She continued to work despite suffering from malaria and with eighteen sutures in her arms.[39]

The integration of old and new nursing Communities into the Russian Red Cross

After the Crimean War the Merciful Sisters and the Compassionate Widows received from society the social recognition they deserved, and this resulted in the establishment of still more nursing Communities. From 1859 more communities, an orphanage, a psychiatric ward and a general hospital were founded in St. Petersburg, Moscow, Kiev and in the Pskov Province. Nikolay Pirogov and his colleagues were directly involved in the training programs, teaching the nurses at the Medico-Surgical Academy and at various external locations. The main task was the training of highly qualified nurses and nursing assistants.

The organization of nursing care was no longer the responsibility of one person, but of a central management with a network of local societies, which in wartime were subordinate to the military medical service and the military command.[17,34]

The Russo-Turkish (Balkan) war accelerated the development of the Russian Red Cross. In 1877 seven Russian Red Cross Communities existed and together they permanently employed 279 Merciful Sisters and further 250-300 nurses not belonging to one of the Red Cross Communities but were available to the Red Cross to send to the war zone. The Russian Red Cross was almost entirely responsible for the deployment of nurses to civilian and military hospitals, medical centres and other care institutes. Nurses who volunteered to work at the front were divided into groups of sixteen under the leadership of a senior nurse before they went to the

front. About 750 nurses were employed during the Balkan conflict, of whom around hundred became reservists after the peace agreement.

Within six months of its formation the number of Russian Red Cross personnel had grown and there was an increase in medical supplies. It also maintained its own military hospitals and barracks, transit stations, first aid stations and a flying medical brigade to the rear of the army. In addition, the Red Cross used six private medical trains to evacuate the wounded.

In the summer of 1877 the Russian Red Cross began with new education programmes. In the last decade of the nineteenth century more than twenty Communities were registered with the Russian Red Cross. The work of these Communities during the famine and cholera epidemic in 1891-1892 highlighted the valuable contributions they could also make in peacetime. By 1898 there were sixty five such Communities in Russia, employing 2 812 nurses and by 1913 they were to be found in all regions of the country.[39,41] By then the total number of Societies had risen to 109, with a total of 3 442 nurses and other staff. The general recognition of the Sisters of Mercy was thus confirmed.[39] The verdict of Pirogov was clear '*Every doctor who works with Merciful Sisters must bow to their activity. The Merciful Sister is an indispensable aid to the doctor, especially to the surgeon. A doctor who knows and loves his job, will find in the Merciful Sister his tireless assistant*.'[15,17]

Regulations and training Programs

The regulations of the Red Cross formed part of the statutes of the various nursing Communities.[39] They described the requirements for admission (age, personal and social status, level of education and training achieved), the guidelines of the organization, educational programs and the rights and obligations of the nurses and the Communities. One of the main functions of the Red Cross Societies was the training of nurses. Training lasted one and a half to two years and consisting of the following components: theoretical education, which included anatomy, physiology, pathology, knowledge of epidemiology, pharmacy, prescriptions and selected topics about women, children, skin, nervous and mental diseases. Practical education laid emphasis on internal medicine, general surgery, outlines of bandage knowledge, minor surgery and vaccination.

The teaching was conducted in the building of the Red Cross, in independent medical institutes, in military hospitals and in city and village hospitals and private clinics. Under the supervision of qualified nurses, the students first worked in

Fig. 8. A honorary diploma of the Belgian Red Cross Society presented to Pirogov in 1880, in: M.M. Gran, Z.G. Frenkelya, A.I. Shingareva, (*1810-1920 Nikolay Ivanovich Pirogov and his legacy the Pirogov congresses. Jubilee edition)*, Co-partnership R. Golike and A. Bilroth, Saint Petersburg, page 98, 1911. Public Domain.

wards, in operating rooms, in outpatient clinics assisting the doctors and in pharmacies where they were taught about the preparation of medicines. After passing an examination followed by a two-year work experience in the Communities, which paid for their education, they worked in that institution as a registered nurse. Students who did not belong to a Community and who paid themselves for their education received a certificate. They were assigned to the reserve sections of the Red Cross and the Executive Committee of the Red Cross could call on them during emergencies. This obligation to be always available when the need arose proved to be invaluable in the fight against cholera, typhoid and diphtheria during the epidemic of 1891-1892. The Russian Society of the Red Cross and the Red Crescent Societies nowadays play an important role in the development of national health care and in the activities of the International Red Cross.

Recognition of the role of Nikolay Pirogov

We have made a plea for the role of Nikolay I. Pirogov in the development of the

International Red Cross. After the Crimean War Pirogov's heritage was valued by others. His contribution to improving the plight of the causalities of war was recognized by the Belgian Red Cross (Fig. 8), by the International Red Cross, but also by his colleagues physicians. In August 1897 during the International Medical Congress its Committee awarded Henry Dunant with the current Congress Prize of the city Moscow for his services to suffering humanity. Nikolay Pirogov was awarded with a Memorial with the permission of Tsar Nikolas II. On the eve of the same Congress, on 3 August 1897, the monument placed in front of the entrance to the clinic of the medical faculty of the University of Moscow was unveiled in the presence of thousands of his medical colleagues from across the world.[42]

In 1898 Frédéric A. Ferrière (1848-1924), deputy to the Grand Council and vice-president of the International Committee of the Red Cross and cousin of Louis Appia, wrote in the *Bulletin International des Sociétés de la Croix-Rouge* [43], that '*…in 1854 the Grand Duchess Helene Pavlovna sent a detachment of Sisters of Mercy to the Crimean War, led by the famous surgeon Pirogov for the many wounded of all nationalities, who had fallen under the walls of Sevastopol...*' He also stated in the same journal '*…that the idea of the Red Cross society has its cradle in Russia. That's where it was realized for the first time...*' We have made plausible that the emergence of the International Red Cross was the result of the interaction between medical doctors and influential and private individuals. In our opinion the influence of Russia in particular Nikolay Pirogov on this development was highlighted in this article.

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