

# France's "année terrible" of the Franco-Prussian War and Paris Commune, 150 years ago, and some remarkable neurologists at the time

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## ABSTRACT

Franco-Prussian War started 150 years ago, and it was a short but a tragic turning point to France as a whole, but also a challenging moment for medicine and some outstanding French neurologists. Besides, a new continental European power emerged, consolidating German as a united state. Two Parisian sieges at this time, from the Prussian and that related to the Communards, struggled the Parisian health status. In Medicine, the wounded and diseased health care disorganized logistics were carried out through the military, municipal and civil health services subdivided into mobile ambulances and fixed hospitals. The novel Cross Red ambulances took part. Moreover, anesthesia and antiseptic surgery were applied, but they were in their beginnings. The Faculty of Medicine of Paris physicians were charged with the subsidiary health care of the population, among them Jean-Martin Charcot. Some of them added to the patient care the meetings at the Academy of Sciences and the Academy of Medicine. Many outstanding neurologists participated at this task force besides Charcot, such as Charles Lasègue, Edmé Felix Alfred Vulpian, Désiré-Magloire Bourneville, Alix Joffroy, Fulgence Raymond, Jules Joseph Déjerine and Henri Duret.

**Key words:** Franco-Prussian war, Paris Commune, Health services, Faculty of Medicine of Paris, neurology, Jean-Martin Charcot

## RESUMO

A guerra franco-prussiana começou há 150 anos e foi um período curto, mas trágico, para a França como um todo, mas também um momento desafiador para a medicina e alguns neurologistas franceses de destaque. Além disso, uma nova potência da Europa continental emergiu, consolidando a Alemanha como um estado unido. Dois cercos parisienses naquela época, dos prussianos e o relacionado aos "communards", lutavam contra o estado de saúde parisiense. Em Medicina, a logística desorganizada dos serviços de saúde, de cuidados aos feridos e doentes, foi realizada através dos serviços de saúde militar, municipal e civil subdivididos em ambulâncias móveis e hospitais fixos. As novas ambulâncias da Cruz Vermelha participaram. Além disso, anestesia e cirurgia anti-séptica foram aplicadas, mas estavam no início. Os médicos da Faculdade de Medicina de Paris foram encarregados dos cuidados subsidiários de saúde da população, entre eles Jean-Martin Charcot. Alguns deles acrescentaram ao atendimento aos pacientes, as reuniões da Academia de Ciências e da Academia de Medicina. Muitos neurologistas de destaque participaram dessa força-tarefa além de Charcot, como Charles Lasègue, Edmé Felix Alfred Vulpian, Désiré-Magloire Bourneville, Alix Joffroy, Fulgence Raymond, Jules Joseph Déjerine e Henri Duret.

**Palavras-chave:** Guerra Franco-Prussiana, Comuna de Paris, Serviços de saúde, Faculdade de Medicina de Paris, neurologia, Jean-Martin Charcot

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## INTRODUCTION

The Franco-Prussian War-FPW (July 19, 1870-January 28, 1871) had a huge impact on all sectors of French life, and it temporarily reduced all scientific work<sup>1</sup>, besides it stroke a wealthy country at the time<sup>6</sup>. Likewise, the health of the starving population at the siege time, and of the combatants were all subjected to lethal infectious diseases. At this basis, the objectives of this work were to know the political aspects of the close antecedents of the FPW; the health care logistic to face the huge health problems of the population; and the repercussion of the political and civil life dismantling caused by the two sieges of Paris, by the German and after by the Parisian Communards urban revolution, on the lives of prominent neurologists at the time.

## THE AMBITIOUS AND TRAGIC WAR GAME

The FPW balanced Napoleon III's interest in restoring the French Empire's prestige against the Republican opposition, and at the other side, chancellor Otto von Bismarck's desire to consolidate German unity around Prussia. However, the immediate cause of the war was the candidacy of a Prussian prince to the throne of Spain, against France's apprehension regarding the foreign empowerment of an alliance between Prussia and Spain<sup>21</sup>. In consequence, on 19 July 1870, France declared war against the powerful Prussian military that defeated French armies after their successive reverses. This victory was in order with the Prussian large and well trained Prussian army against the overconfident but fragile opposing force<sup>2</sup>.

Markedly, the Battle of Sedan left the emperor Napoleon III as a prisoner of the German what ended the French Second Empire. On September 4, 1870, the Third Republic was proclaimed in Paris, and a new provisional government was declared having Léon Gambetta as a leading figure of it who helped the defense of France during the war. After, Prussian army laid siege to Paris, the "city of lights", but French resistance crumbled, and in consequence this was the major event of the FPW (September 19, 1870-January 28, 1871). During this siege, there was an official power, but also a counterpower consisting of Radical Republican workers and extremists of all kinds, among them, Gustave Flourens (1838-1871) son of Marie-Jean-Pierre Flourens. Gustave occupied during one year a teaching assistant position in the same house as his father, at the Collège de France, about the "History of human races"<sup>6</sup>. At the first siege, the German had started the

bombing to Paris, on 27 Dec 1870, and Paris surrendered on January 28, 1871, what was followed by an armistice. However, the Communards, refusing capitulation, obliged Adolphe Thiers, the first President of the French Third Republic, to settle in Versailles<sup>10</sup>. This government was threatened in March, by an insurrection in Paris, in which the radicals had established their short-lived government, the Paris Commune, that had promoted the second siege of Paris from 18 March to 28 May 1871. At the end of May, Thiers had pushed the government troops against the Paris Commune revolutionaries what ended in the 'bloody week', 21-28, and wind up in the bloodbath, on Sunday, May 28, 1871.

The main landmarks of the FPW and Communards siege were depicted in Figures 2.

## THE AID FOR THE WOUNDED AND SICK AND THE AMBULANCE PARTICIPATION

The disorganized logistics health care were carried out at the Wartime, moreover anesthesia and antiseptic surgery were in their beginnings. A summary of this situation is presented at the appendix.

The role of the ambulance and makeshift medical care for the wounded and sick at the time of the war were depicted in Figures 2.

## THE OUTSTANDING NEUROLOGISTS AT THE WARTIME

This paper section deals with some issues about selected outstanding neurologists represented at figure 3 and how they were affected by this wartime. Firstly, as reference, it is important to say that the FPW turmoil disturbed the French science and some outstanding scientist, such as Pasteur and Claude Bernard, as it compromised their scientific inspiration for work. They both even left Paris to the province<sup>2</sup>.

Jean-Martin Charcot was privileged in this approach, but others are also mentioned such as CharlesLasègue, Edmé Felix Alfred Vulpian, Désiré-Magloire Bourneville, AlixJoffroy, Fulgence Raymond, Jules Joseph Déjerine and Henri Duret.

Charcot was associated with La Salpêtrière and with powerful politicians all along with his successful career<sup>2,14</sup>, besides this Parisian and La Salpêtrière are closely associated with the history of Paris. La Salpêtrière was originally constructed as gun factory and place to store gunpowder during the 16th century, in the next it was



a-General Reille delivering Napoleon III's letter of surrender to King William I at the Battle of Sedan (mural painted in 1884 by Carl Steffek).



b-"Defence of Paris-Students Going to Man the Fortifications". After the surrender of Napoleon III, the French Republic refused the German settlement terms, and the war was forced to continue (Illustrated London News Oct 1, 1870).



c-When the battle was over, Parisians buried the bodies of the Communards in temporary mass graves. They were quickly moved to the public cemeteries.

Figures 1-Some milestones of the Franco-Prussian War: a-Surrender of the French Emperor for the German Winner on the Sedan Battle; b-Engagement of the Parisian population against the German invaders; c-The carnage in the Commune (Pictures: Public domain, retrieved from Wikipedia).

transformed to the Salpêtrière Hospital that was used as an asylum for beggars, prostitutes, and the insane. During the FPW, it was turned into a field hospital for wounded soldiers, but then the combatants sent in had non-surgical diseases, and eventually it became a medical center for smallpox and cholera epidemics<sup>20</sup>.

Regarding Charcot, he had lived at the "City of

light" all his life, and he experienced the French Revolution of 1848, and later the FPW, and worst, the two sieges of Paris. Regarding La Salpêtrière, Charcot had been resident on it in 1853, but returned to it in 1862, at the age of 37, as head of a department to leave it no more<sup>2,15</sup>. At that time, he was very knowledgeable at the general pathology and internal medicine, because of his previous nine years



a-Ambulancemen collecting the wounded and dead at Champigné (Etching by A. Lancon, 1870).



b-Wounded soldiers being treated in a church, in Sedan. (Wood engraving by J. Swain after J. Bernard.).

Figures 2. Aid to the Sick and Wounded in the Franco-Prussia War (Pictures: Public domain, retrieved from Wikipedia).

of work on it<sup>16</sup>. Besides, during these eight years between 1862 and 1870, Charcot became one of the founders of modern neurology, for he wrote many acclaimed papers on multiple sclerosis, amyotrophic lateral sclerosis, and the localization of lesions of the spinal cord, already before the War.

This year of 1870 marks Charcot's start study of hysteria<sup>6</sup> - academic enterprise interrupted by the FPW and the Commune.

Charcot was nominated "Professeur agrégé" in 1860, and on November 28, 1872, he was finally appointed Professor at the Chair of "Anatomy Pathology", but only ten years later, he was elected to an entirely new Chair of Clinical Diseases of the Nervous System<sup>17</sup>. Although amid the FPW and the Commune, Charcot had remained in Paris, he asked his family to leave Paris and after went to London for the sake of protection. With this purpose, he entrusted his children and wife to the care of Duchenne de Boulogne, who had fixed themselves in London<sup>2,14</sup>. "Charcot has therefore experienced the severe repercussions of these dark months of siege: the cold, famine, diseases, seditious political unrest and the dead", as was reported by Harel, a historian<sup>6</sup>.

During the war, Charcot was confined to his service at La Salpêtrière, returning each evening to Avenue du Coq where he was living, but exposing himself to all sorts of hazards at this wartime. During the siege, he was seen caring for the wounded and sick in the army that La Salpêtrière had received in temporary constructions<sup>3</sup>. This FPW experience deeply shocked Charcot, and he later refused to attend any congresses held in Germany<sup>17</sup>.

Regarding the Commune, there is a legend that Charcot, speaking of the "events we know", he reported going to the hospital every morning, in spite of possible projectiles, as well as "this collective madness"<sup>10</sup>. This raises the question of the male hysteria because four of the Charcot's cases involved soldiers with combat experience, but Charcot only recorded this link at the patient's biography<sup>8</sup>. Interestingly, Charcot published about the male hysteria for the first time only in 1878, but not at the wartime. In this way, it seems that he deliberately avoided recognizing male hysteria, or he just observed post-traumatic disorders delayed symptoms, but not acute ones.

Now, during the siege of Paris, it is mentioned that Charles Lasègue, and Alexis-Charles Legroux, a physician who studied the occurrence of scurvy in prisons, they established a link between the disease and physical inacti-

vity proportionally to the enclosure time<sup>7</sup>.

Regarding Edmé Felix Alfred Vulpian, his biographer Maxime Laignel-Lavastine, a historian, apud Walusinski<sup>20</sup>, mentioned how Vulpian was a lover of peace and order, and how disgusted he was with the German, and 1871 communard physicians. In this way, he abominated the German elite that threw themselves onto the battlefield with fervor and no thought for the most common laws of humanity. Regarding the mentioned physicians, Vulpian made bitter statements such as claiming that among them, there was some incompetent and charlatan. Regarding her family, Vulpian sent his pregnant wife to Rennes during the advance of the Prussian troops, to spare her from the privations of war.

Désiré-Magloire Bourneville obtained an MD degree at the beginning of the year of 1870, and at the time of the start of the War, he was assigned to the 160th regiment of the National Guard, as a surgeon, and then a staff assistant at the Jardin des Plantes ambulance. Nevertheless, during the siege of Paris, as Internal at the Pitié, he had directed the evacuation of the sick rooms of the old hospital, a target of the German batteries. Later, at the Commune meantime, he fiercely opposed the summary execution of the federated wounded and struggled to enforce the right of them to asylum at the hospital<sup>4</sup>.

Alix Joffroy, in 1871, worked as a medical intern at the Lariboisière's Hospital that was closely associated with the days of the siege of Paris, besides he was also linked to Charcot's department, and the master even inspired him regarding the subject of his Ph.D. Joffroy wrote on the day after the France surrender, his first letter to his mother, an important memoir of the FPW at a physician's look. In this letter, he described the events as he experienced them, expressing his feelings about the causes of this political and military disaster, and his experience there as an intern. In his second letter, Joffroy report with great precision the fighting at the barriers and then the violent subjugation by the Army of the Communards around Lariboisière's Hospital. Like all the Parisians, Joffroy had limited food resources, but he had to be satisfied with small rations of meat that included dog, cat, horse, and vermin. Although, his general health status did not seem to have been spoiled by the limitations at the wartime<sup>18</sup>.

At the wartime, Fulgence Raymond was part of the ambulance service, accompanying the march battalions in their combat under the walls of Paris. Regarding the bombing in January 1871, he helped to transfer the pa-

tients from La Salpêtrière to a safer shelter<sup>16</sup>.

Henri Duret was a brilliant surgeon who had an interest in the supply arteries in the brainstem and then in the cortex. During the war, he was an ambulance assistant to the Loire army, and his conduct was noted by General Chanzy. In the early 1914 war, when he was no longer enlisted in the war force and already retired from the surgical clinic department, Duret ran two auxiliary hospitals on the premises of Catholic Medical Schools and a neighboring college. His dedication and courage in the face of foreign opposition earned him the order of the Legion of Honor, in 1921<sup>1</sup>.

During the War, Jules Joseph Déjerine, Frenchborn in Geneva, was assigned to the National Guard, but the signing of the armistice on 28 January 1871 ended his mobilization. He worked in a field hospital in Geneva caring for the wounded French soldiers, and after he left for Paris. He arrived in Paris on 21 March 1871, three days after the start of 2nd siege. In 1871, Dejerine received the “Croix de Bronze” by “La Société Française de Secours aux Blessés et Malades militaires” (the French Society for the Care of the Military Sick and Wounded)<sup>20</sup>. Coincidentally, more than four decades later he was in charge of a neurological war hospital at World War I, at this time at the

side of the winner and against the subdued German, but he died in 1917, after exhausting hours of overwork<sup>9</sup>.

## CONCLUSION

The hurtful events of all FPW and the Commune siege deeply marked French, and until nowadays, it attracts interest in the social-political intermingled causes and effects of it. Here, the main interest is in the growing Parisian neurology crushed by the defeat, the two sieges, foreign and civil, besides the riot atmosphere, and the resentment against the German. For this purpose, it was brought the daily life of some outstanding neurologists in the care of patients, in hospitals, ambulances, or the field of battle, besides some, also in Academic meetings. However, during the chaos, they have brought decisive humanitarian aid to the wounded soldiers or the crushed population, overwhelmed by food shortage, infections, and violence of the fighting, besides a rigorous winter time. All these neurologists who remained in Paris worked well in spite of the hardship. The professional composure of the mentioned physicians was admirable, notably that two who participated in both the FPW and World War I in defense of France and its inhabitants, Jules Dejerine and Henri Duret.



Figures 3. Some outstanding neurologists with participation in the Franco-Prussian War (Pictures: Public domain, retrieved from Wikipedia).

## APPENDIX

### *Appendix. Health care logistics, anesthesia and antiseptic surgery, and the participation of the learned societies at the time of the Franco-Prussian War.*

Most learned societies were on vacation when the German Siege began, and many of them indefinitely postponed the resumption of their sessions. Although, the Academy of Sciences and the Academy of Medicine regularly had continued their work<sup>15</sup> even in the 2nd siege, except for the Bloody Week<sup>10</sup>. Undeniably, at the first siege the concerns were turned almost exclusively to concrete problems related to it, such as food and hygiene, but during the Commune, scientific communications seem to ignore the political context<sup>4</sup>. Nonetheless, most of the academicians, professors of the Faculty, have simply forgotten the Academy of Medicine during the Commune siege to devote themselves to the hospitals; others, like Charles Adolphe Wurtz, dean of the Faculty, left for Versailles, or like Broca, remained during these two months, at the same time as academicians and doctors, as reported by Pigeard-Micault<sup>10</sup>.

To deal with all the diseased, relief temporary committees were formed in the years of the FPW. The Faculty of Medicine of Paris announced that professors, aggregates, and students were at the disposal of the government for all the care to be given to the sick and wounded<sup>12</sup>. The Faculty count at the time with sixty teachers including twenty-nine professors<sup>4</sup>. As well as, in the provinces, most of the Medical Schools offered the same services or organized themselves into committees<sup>6</sup>. Besides, the General Director of Public Assistance, Hospitals, and Civil Hospitals of Paris, obtained from the ministry that the doctors, the interns, and the external hospitals were exempt from military service<sup>13</sup>.

The poor organization and facilities of French medical care have been apparent since the beginning of the conflict, unlike the German one. In spite of this drawback, they can be delineated three categories of health services: the military, the municipal and the civil. Each of these services would be distinct and independent of each other, and each would be subdivided into mobile ambulances and fixed hospitals<sup>14</sup>. In this military health service, mobile ambulances included flying ambulances, which were responsible for picking up casualties on the battlefield, besides front-line ambulances, where the first wound dressings

would be completed, or they would be made urgent operations. Regarding the fixed hospital, they would receive the transportable wounded, including small private hospitals (also called ambulances)<sup>5</sup>. Regarding these casualties, Walusinski<sup>20</sup> gave an account of the atrocity of this wartime and the dehumanization of soldiers' wrecked bodies and minds.

To deal with these miserable people, surgeons had focused their efforts to try to save those with injuries in the limbs, but those with abdominal, cranial or spinal injuries were more often left without intervention, many without even having relief of their pain or thirsty. However, this wartime demonstrated the efficacy of the smallpox vaccination, isolation of contagious patients, and aseptic treatment of wounds and surgeries, along with hemostasis control<sup>20</sup>.

The civil ambulances in Paris were numerous, one of them was the Company of Help to Wounded Soldiers, directed from the Palace of Industry; the Ambulance of the Press; and multiple Ambulances throughout Paris, joined together under the emblem of the Red Cross that was in its early years during this wartime<sup>5</sup>.

Amid the fighting, the action of ambulances assisted wounded soldiers, and they had brought decisive humanitarian aid to an Army Health Service, overwhelmed by violence and the fluctuations of the fighting. The hospitals and the Public Assistance worked well in spite of the difficulties that included the disorder, the resources shortage, the arrival of patients and search for refuge during the bombings and the "bloody week"<sup>5</sup>. Besides, foreign countries provided also field hospitals, transport, and surgical operations and other medical assistance as effectively as possible to both French or German combatants and the civilians affected by the war. They would even secure access to the battlefield from military authorities.

The number of deaths recorded from January 1 to September 19, the day Paris was surrounded by the German, was 42,608 persons, but during the siege days between September 20 and December 31, 30,973 deaths were recorded. In sum, the total number of deaths recorded at Paris in 1870 amounted to 73,581: smallpox, 10,456 deaths; scarlet fever, 575; measles, 857; typhoid fever, 2,400; bronchitis, 4,032; pneumonia, 4,571; diarrhea, 2,202; dysentery, 576; angina and croup, 833; puerperal affections, 369; war wounds, 1.156<sup>19</sup>. This excessive mortality was the result of several causes, some of which happened even before the siege. In concert, famine and illness were wi-

despread, and they contributed to the increased mortality, besides epidemic diseases including typhoid fever and smallpox that were favored by the deprived sanitary conditions and low rate of smallpox vaccination. To the causes of mortality which have acted independently of the state of siege, it is summed the rigors of an exceptional winter<sup>19</sup>.

The poor sanitary conditions were favorable for the spread of epidemic disease what is included smallpox and typhoid fever, besides hospital infections that caused increased mortality among operated patients, the newly born, and the injured. All factors together plus the famine made the poor began to die en masse. Consequently, military and civil were decimated by cold, hunger, shells, but especially epidemics, including smallpox that struck all of France<sup>18</sup>. Besides, it happened the so-called “obsidional fever” that was considered a collective psychosis striking a besieged population that had allegedly pushed the Communards to excesses in their behavior<sup>6</sup>.

Regarding the diet, during the winter of 1870 to 1871, starving Parisians had used zoo animals into their eating habits, besides frequently crows, sparrows, cats, dogs, and rats<sup>6</sup>. Apart from these animals’ protein, there was a policy to convincing people to eating horsemeat, which was not included in the French original diet habits<sup>4</sup>.

In this war, it has seen the advent of antiseptic surgery, and thus sterility became the focus of experimentation and military medicine reports in this campaign<sup>11</sup>. Regarding anesthesia, the wounded combatant was used to be transported to the Ambulance of proximity where he could receive if necessary the general anesthesia by the cornet of Raynaud or the compress what was rather widespread as mentioned by Guivarc’h<sup>5</sup>, at least ideally.

## CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

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