

# HÉLÈNE SPARROW-GERMA, A POLISH-FRENCH BIOLOGIST IN THE RESISTANCE AT THE PASTEUR INSTITUTE

 <https://orcid.org/0000-0002-5623-571X>

**Jean-Charles Foucrier**

Bureau Armée de l’Air et de l’Espace

Service historique de la Défense – Vincennes

## ABSTRACT

Hélène Sparrow-Germa (1891–1970) was a renowned French-Polish microbiologist, specialist in infectious diseases. Professor at the University of Warsaw, then member of the Pasteur Institute of Tunis, she was particularly dedicated to the struggle against typhus, having tried to get an effective vaccine to overcome the plague still deadly in the first years of the twentieth century. Hélène Sparrow devised an ambitious strategy, developing a sanitary fender on the eastern border of Poland against the spread of epidemics from Russia. The story of this French-Polish doctor is also repeatedly characterised by the ordeal of war. Willingly confronted with extreme and highly dangerous situations, Hélène Sparrow devoted herself to treating and helping wounded and sick soldiers, offering them protection and assistance. Often risking her own life, she showed a remarkable temerity reflecting her highly charismatic personality.

**Keywords:** World War II, Medicine, Typhus, Pasteur Institute, Resistance.

**Słowa kluczowe:** II wojna światowa, medycyna, tyfus, Instytut Pasteura, ruch oporu.

## INTRODUCTION

On 3 January 1971, the *British Medical Journal* published an obituary dedicated to Hélène Sparrow-Germa (1891–1970), a Franco-Polish microbiologist from the Pasteur Institute:

Hélène Sparrow-Germa was one of the best-known personalities in international epidemiological circles of the last twenty-five years. Her scientific excellence, her phenomenal energy and

her energy for fieldwork were combined with great beauty and prodigious charm. She was a remarkable teacher, fluent in several languages, and a generous, wise and faithful friend.<sup>1</sup>

This particularly laudatory assessment by the prestigious British magazine indicates the level of reputation that H el ene Sparrow-Germa achieved during her career. Specialized from the very beginning in the search for new vaccines, the scientist is the author of 109 scientific works published on treatments against typhus,<sup>2</sup> scarlet fever,<sup>3</sup> and among others recurrent fever.<sup>4</sup> This rich career covers more than half a century and is well known in international literature as the first woman to be involved in international public health.<sup>5</sup> Her story is not unlike that of a certain Marie Curie. In addition to the intimate link between France and Poland, the two women share a passionate love of science, a humanistic dedication and an unquenchable energy coupled with a strong personality.

The story of H el ene Sparrow-Germa, alongside her scientific achievements in the specific field of contagious diseases, is interwoven with the conflicts of the 20<sup>th</sup> century. The microbiologist became involved, even committed, by helping the wounded at the front and hiding combatants. Her research into a vaccine against typhus during the Second World War was the high point of her work, with the German army coveting this contagious disease – and lacking effective treatments. While engaged in research at the Institut Pasteur in Tunis, H el ene Sparrow-Germa contributed decisively to the development of a new vaccine against typhus, soon coveted by the German Army, affected by the scourge on the Eastern Front. This last aspect of H el ene Sparrow-Germa’s life has so far remained little known, if not ignored by international literature focused on her professional career.<sup>6</sup> The scientific and resistant course of H el ene Sparrow-Germa during the Second World War is the subject of this study.

The historiography of the Institut Pasteur remains generally limited, focused on the scientific dimension alone, not really open to the military dimension, and is especially the prerogative of science historians. If the figure of Louis Pasteur aroused an intense biographical and memorial activity,<sup>7</sup> the Institute that he founded remains

<sup>1</sup> Institut Pasteur de Paris [hereafter: IPP], FR AIP SPA, H el ene Sparrow (1891–1970), *British Medical Journal* 1971, no. 5739, p. 54.

<sup>2</sup> H. Sparrow, C. Nicolle, “Application au cobaye et   l’homme de la m ethode de vaccination contre le typhus exanth ematique par emploi d’intestins ph eniqu es de poux (m ethode de Weigl),” *Archives de l’Institut Pasteur de Tunis* 1932, no. 21, pp. 25–31.

<sup>3</sup> H. Sparrow, “Immunization against Scarlet Fever with the Aid of the Scarlet Fever Toxoid,” *Comptes Rendus des S ances de la Soci et  de Biologie et de ses filiales* 1927, no. 97, pp. 957–959.

<sup>4</sup> H. Sparrow, “Etude du foyer  thiopien de fi vre r ecurrente,” *Bulletin of the World Health Organization* 1958, no. 19, pp. 673–710.

<sup>5</sup> B. Zaorska, “Helena Sparrow-Germa (1891–1970),” *Postępy Mikrobiologii* 1995, no. 2, pp. 115–119; S.T. Sroka, “Sparrow (Sparrow-K ugelgen, Sparrow-Germa) Helena (1891–1970),” *Polski Słownik Biograficzny* 2002, t. XLI, pp. 39–40; J. Lindenmann, “Women Scientists in Typhus Research during the First Half of the Twentieth Century,” *Gesnerus* 2005, no. 62, pp. 257–272.

<sup>6</sup> Barbara Zaorska is the only one to mention it in a short paragraph. B. Zaorska, “Helena Sparrow-Germa (1891–1970),” p. 118.

<sup>7</sup> Especially during the year 2022, which is the bicentenary of the birth of Louis Pasteur. See M. Morange, *Pasteur*, Paris 2014; A. Perrot, M. Schwartz, *Pasteur. L’homme et le savant*, Paris 2022; A. Perrot, M. Schwartz, *Pasteur   la plage. Le monde des microbes dans un transat*, Paris 2022.

a little-known object of history. The works relating to the founder as to the institution are the result of profiles of very specific historians: in a memorial calendar punctuated by the anniversary dates of scientific discoveries, the Institute solicits for official events either historians of science, researchers in experimental sciences who have worked with or for the Institute Pasteur,<sup>8</sup> or agents from the management or internal heritage services.<sup>9</sup> The only long-term work on the Institute was the international colloquium held from 6 to 10 June 1988, the proceedings of which were published three years later. Most of the contributions requested on the occasion of the Institute's centenary were in fact to celebrate a deceased Pasteurist figure (Louis Pasteur himself, Émile Roux, Émile Duclaux, André Lwoff, Émile Marchoux, etc.) with the advances or innovations it had implemented in research. The impact of the two world wars on the institution is totally absent from this work.

The references of the article are mainly based on the archives of the Pasteur Institute in Paris, kept at the Archives Unit of the Scientific Information Resource Centre (CeRIS), which is in charge of preserving the Institute's scientific memory.<sup>10</sup> Although little known even to academic researchers, this center nevertheless possesses 300 archive collections covering the 19<sup>th</sup> and 20<sup>th</sup> centuries, from the first historical collaborators of Louis Pasteur to contemporary researchers, including Hélène Sparrow-Germa.

## A WARLIKE INITIATION

### *In the trenches of Russian Empire*

Born in 1891 in Bogusław (Bohuslav) in the province of Kiev (Kyiv), Hélène Sparrow was of Polish origin on her mother's side and English on her father's,<sup>11</sup> grew up in a cultured environment, thanks in particular to her mother, a writer and committed patriot. She met many doctors, artists and writers; she in turn developed a vibrant patriotism for Poland, which had been under Russian rule for almost a century. A studious and brilliant student, Hélène Sparrow attended the University of Medicine in Kiev and obtained her first degree with honours in 1915. By then, the First World War had been ravaging Europe for several months. The young student was mobilized to treat the Tsar's soldiers in the field. At only 25 years old, Hélène Sparrow's apprenticeship in warfare begins.

<sup>8</sup> See J.-P. Soulier, *Jacques Monod. Le choix de l'objectivité*, Paris 1997.

<sup>9</sup> See A. Perrot, M. Schwartz, *Pasteur et ses lieutenants. Roux, Yersin et les autres*, Paris 2013; A. Perrot, M. Schwartz, *Pasteur et Koch. Un duel de géants dans le monde des microbes*, Paris 2014.

<sup>10</sup> Institut Pasteur: [pasteur.fr/fr/ceRis/archives](http://pasteur.fr/fr/ceRis/archives) [3 March 2022].

<sup>11</sup> Hélène Sparrow's mother was the daughter of a Polish doctor, Dr Sas-Stefanski. Her father was the grandson of William Sparrow, a British architect famous at the Tsar's court, who designed many buildings in St. Petersburg and Moscow.

On the Eastern Front, H el ene Sparrow discovers an appalling situation. The soldiers of the Russian Empire suffered heavy losses in the face of a determined enemy, well equipped with modern military hardware. In addition to the hell of the fighting, the Russian soldiers also had to deal with the scourge of epidemics, facilitated by the lack of basic hygiene measures. All the nations of Central and Eastern Europe were affected. Serbia suffered 120,000 deaths because of a typhus epidemic, which marked its defeat. Turkey lost most of its soldiers to cholera, malaria and typhus – seven times more than at the front.<sup>12</sup>

Since the late 19<sup>th</sup> century, typhus has been endemic mainly in Russia, due to poverty and high concentrations of populations. Limited to a few annual outbreaks in winter, the disease developed into a pandemic with the First World War, facilitated by the destruction and displacement of military and civilians. It continued in Eastern Europe with the Russian Civil War, causing 2 to 3 million victims until 1922.<sup>13</sup> Poland was affected by typhus in 1916 with nearly 35,000 cases reported, then 47,000 the following year, 122,000 in 1918 and 231,000 in 1919.<sup>14</sup>

In the 1920s, although typhus had been ravaging humanity since centuries, the nature of the disease had only been known for a few years. In 1909, the French doctor Charles Nicolle of the Pasteur Institute in Tunis finally discovered the transmission factor of the disease: human blood was more suitable for feeding lice than monkey blood.<sup>15</sup> Lice carrying the louse-borne typhus bacterium (*Rickettsia prowazekii*) thus contaminate humans, leading to powerful fevers that cause delirium. As antibiotics are still unknown, typhus can be fatal in a matter of days.

Operating day and night, H el ene Sparrow tries to limit the hecatomb, at the risk of contracting one of the contagious diseases that suffocate the Russian army. In this Dantean world, the young woman meets Dr. Robert von Kugelgen, a Baltic baron also serving in the Tsarist army, during a mission. H el ene Sparrow finally married him in 1917 and retired with him to Dorpat (Tartu) in Estonia the following year. After the First World War, she studied briefly at the University Clinic in Dorpat under Professor Aleksander Bylina. But the spectra of civil war soon darkened Helen Sparrow's horizon again, this time through the Russian Revolution. Worried about her family back in Kiev, the young Polish woman decides to return home, not hesitating to leave her husband. From this union, born and broken by the war, survived a daughter, Marie Bogna Seiler von Kugelgen, only child and raised alone by her mother.<sup>16</sup>

---

<sup>12</sup> A. Chwalba, *1914–1918: An Anatomy of Global Conflict*, Krakow 2014, p. 114.

<sup>13</sup> D.K. Patterson, "Typhus and Its Control in Russia, 1870–1940," *Medical History* 1993, no. 37 (4), p. 361.

<sup>14</sup> E.W. Goodall, "Typhus Fever in Poland 1916–1919," *Section of Epidemiology and State Medicine* 1920, no. 13, pp. 263–264.

<sup>15</sup> M. Mathis, *La vie des poux*, Paris 1955, pp. 57–58.

<sup>16</sup> IPP, FR AIP SPA, *Polish Medical Science and History Bulletin*, July 1971, p. 101.

### *A cordon sanitaire on the Russian border*

In Kiev, Hélène Sparrow was appointed assistant to Professor Wolodymyr Lindeman, director of the Institute of Bacteriology, and was introduced to this medical specialty, which she kept throughout her career. As the fighting drew closer to Kiev, she decided in 1920 to evacuate her family to Warsaw (Warszawa) in Poland. The journey in vans took place on straw for a week, without supplies and under attack from the Red Army. In Warsaw, the young woman was welcomed by the renowned bacteriologist Ludwik Rajchman, the future founder of UNICEF, and became head of the laboratory at the Institute of Hygiene. The health situation was catastrophic, with nations ravaged by warring armies and plagued by epidemics. Even for Lenin, the White armies were not the most dangerous opponent:

It is impossible to imagine the terrible situation in the regions affected by typhus, where the population is stricken, weakened, deprived of material resources, where all normal life has been interrupted. Therefore, Comrades, we must absolutely concentrate all our efforts on this issue. Either the lice will make socialism succumb, or socialism will make the lice succumb.<sup>17</sup>

As soon as she arrives, Hélène Sparrow is given a mission in Grodno (Hrodna), devastated by cholera. Once again in contact with the hellish terrain, the young Polish woman struggled to treat the civilians and the Polish armies. In 1922, in an attempt to stem the steady flow of epidemics from Russia, a decision was made to create a *cordon sanitaire* on Poland's eastern border. Sparrow was given the task of organizing the four laboratories of this safety chain. In 1925, despite the efforts of the Institute of Hygiene, an epidemic of scarlet fever swept through Poland. She received help from the French doctor Robert Debré, a Parisian paediatrician, who had been commissioned by the League of Nations to help fight this infectious disease. On his arrival, Robert Debré was immediately charmed by the young woman's personality:

So it was Hélène Sparrow who received me in Warsaw and, in a way, welcomed me in the name of Poland, of Polish scientists and doctors. From the outset I was struck by the luminous intelligence, the breadth of knowledge, the organizational skills, the authority and the prestige of Hélène Sparrow, and at the same time seduced by the kindness of her welcome, her charming smile, her dark eyes and deep gaze, the charm of her person and finally the truly joyful enthusiasm with which she introduced me to our Polish colleagues and introduced me to the capital of her homeland.<sup>18</sup>

Hélène Sparrow and Michel Debré succeeded in containing the scarlet fever epidemic, while in Russia the situation gradually stabilized with the victory of the Red Army. She could then devote herself to obtaining her doctorate and preparing her thesis on her main subject of interest: typhus.

---

<sup>17</sup> A. Allen, *The Fantastic Laboratory of Dr. Weigl*, New York 2014, p. 34.

<sup>18</sup> IPP, FR AIP SPA, R. Debré, *A la mémoire d'Hélène Sparrow, polonaise et française*, p. 1.

## THE SEARCH FOR A VACCINE

*Polish know-how exported to Pasteur Institute*

Already confronted with this virulent infectious disease during the First World War and the Russian Civil War, H el ene Sparrow dedicated her research to the fight against typhus. Since 1921, she has been working with Professor Rudolf Weigl, whose laboratory in Lw ow (Lviv) was part of the cordon sanitaire near the Russian border. A talented biologist, Weigl was perfecting a new typhus vaccine made from contaminated but neutralized lice. To use his highly complex technique, he has his own lice farm, inoculating them with typhus himself with the help of a microscope and, above all, with extreme dexterity.<sup>19</sup> The Weigl vaccine was the only one to be recognized by clinical tests, and was used massively from the 1930s with vaccination missions sent to Africa and to China. Nominated for the Nobel Prize, Weigl was invited to Geneva to present his methods, gaining international recognition.<sup>20</sup>

Motivated by the idea of finding a simpler solution, H el ene Sparrow decided to create her own vaccine. She infected a laboratory guinea pig 33 times with the typhus bacterium in order to reduce its harmfulness and make it into a vaccine product. The microbiologist then takes brain extracts from the animal, which she believes to be immune, and decides to give herself subcutaneous injections in secret and at great risk. However, the pathogen was not sufficiently neutralized, rapidly triggering a severe attack of typhus. The doctoral student only narrowly escaped, but did not abandon her research.<sup>21</sup>

In 1924, H el ene Sparrow obtained a grant to travel to France and attend courses given by the greatest medical names at the Pasteur Institute in Paris: the microbiologists Alexandre Besredka, Ren e Legroux and Charles Nicolle. Impressed by her research on typhus, the latter gave her a new scholarship to continue her studies at the Pasteur Institute in Tunis, under his own direction. "From that moment on, she never left this master of genius intelligence and the strongest attachment united them forever," said Robert Debr e. "H el ene Sparrow was part of his team, where research into louse-borne typhus, its spread and prevention brought the world the remarkable discoveries that we know."<sup>22</sup>

Back in Poland in 1928, H el ene Sparrow obtained her doctorate in biology after defending a thesis entitled: *Problems of vaccination against louse-borne typhus*.<sup>23</sup> She was subsequently appointed associate professor at the University of Warsaw, holding the chair of bacteriology. She organized advanced courses in this medical specialty in order to train future Polish doctors, then returned to her fight against

<sup>19</sup> S. Kry nski, "Rudolf Weigl (1883–1957)," *Medycyna Doświadczalna i Mikrobiologia* 1967, no. 19, pp. 233–239.

<sup>20</sup> A. Polak et al., *Typhus Works of Rudolf Weigl, PhD, Ludwik Fleck, MD, and Eugeniusz Łazowski, MD, against the Nazis*, <https://doi.org/10.1016/j.clindermatol.2022.02.016> [accessed: 2 December 2022].

<sup>21</sup> IPP, FR AIP SPA, Letter from Prof Przesmycki to H el ene Sparrow's daughter (Marie Bogna Seiler), 25 January 1971.

<sup>22</sup> IPP, FR AIP SPA, R. Debre, *A la m emoire d'H el ene Sparrow, polonaise et fran aise*, p. 6.

<sup>23</sup> IPP, FR AIP SPA, *H el ene Sparrow-Germa*, p. 1.

typhus in 1931, leaving to study it with Charles Nicolle in Mexico. In 1933, Hélène Sparrow settled in Tunis for the long term and took French nationality, after marrying an agricultural engineer, Philippe Germa, an importer of new crops in the Maghreb countries.<sup>24</sup> The same year she was appointed head of the laboratory at the Pasteur Institute in Tunis, a position she held until her retirement in 1960.<sup>25</sup>

Hélène Sparrow-Germa's first year in Tunis almost proved fatal. Bitten by a laboratory monkey, the young microbiologist suffered from gangrene and remained between life and death for over a month.<sup>26</sup> Still in contact with Rudolf Weigl, the head of the laboratory imported the Polish professor's technique to Tunis, where it was successfully applied: "Our preventive vaccination trials in humans prove the effectiveness of the method for preventing typhus in our species," said Hélène Sparrow-Germa. "The staff of the Pasteur Institute in Tunis who are involved in typhus research are now vaccinated by the Weigl method."<sup>27</sup> However, the Weigl vaccine remains impractical for industrial production, as Paul Giroud, head of the department and typhus bacteria specialist at the Pasteur Institute in Paris, wrote:

The difficulties of breeding, inoculating and dissecting an enormous number of these invertebrates [lice] require considerable work by a large and highly specialised staff. The cost price of rickettsiae is therefore extremely high and Weigl's vaccine, despite all its interest, remains a luxury product, practically inaccessible, except perhaps in Poland and with government intervention, to the mass of poor populations that typhus prefers to attack.<sup>28</sup>

Hélène Sparrow-Germa's main objective at the end of the 1930s was to discover a new typhus vaccine that was more efficient to produce. When Charles Nicolle died in 1939, the management of the Pasteur Institute in Tunis was taken over by one of his relatives, Dr Paul Durand. Hélène Sparrow-Germa worked with him, in parallel with research carried out at the Pasteur Institute in Paris by Paul Giroud. At the same time, Poland was occupied for the umpteenth time by Germany and Russia in September 1939. The microbiologist was once again caught up in the war.

### *Germans' desperate quest for a vaccine*

French researchers were not the only ones interested in the fight against typhus. The German offensive against the USSR in June 1941 and the stalemate in front of Moscow (Moskva) at the end of the year raised the spectre of this infectious disease, while the historical memory of the disaster of the Napoleonic armies loomed large. The Nazis had certainly taken over the laboratory of Professor Rudolf Weigl in Lwów, but the production of serum only reached 6,500 doses in December 1941, an insignificant

<sup>24</sup> Her last name is now Sparrow-Germa.

<sup>25</sup> IPP, FR AIP SPA, *Bulletin de la Société de Pathologie exotique*, 1971.

<sup>26</sup> IPP, FR AIP SPA, Letter from Marie Bogna Seiler to unknown recipient, 29 November 1970.

<sup>27</sup> IPP, FR AIP SPA, *Application au cobaye et à l'homme de la méthode de vaccination contre le typhus exanthématique par l'emploi d'intestins phéniqués de poux (Méthode de Weigl)*, pp. 25–32.

<sup>28</sup> IPP, FR AIP DUR, Paul Durand (1886–1960), *Développement dans le poumon des virus typhiques et boutonneux instillés par voie respiratoire*, p. 2.



result for vaccinating the more than 5 million soldiers of the *Wehrmacht* engaged on the Eastern Front. The Germans had little choice: they had to either create a new vaccine or manage to obtain other products made by other foreign countries.<sup>29</sup>

Both solutions were finally tried. SS doctor Erwin Ding-Schuler, an ambitious and unscrupulous young academic, was commissioned to develop a German vaccine using prisoners from the Buchenwald concentration camps as guinea pigs. Inexperienced and untalented, “very capricious and changeable”<sup>30</sup> according to the German prisoner and future politician Eugen Kogon, Ding-Schuler was a repeated failure. Lacking experience, talent and equipment, Ding-Schuler developed a vaccine that he tested on some of the infected prisoners, the other receiving no treatment to serve as controls. All the inmates suffered atrociously, under the eyes of the SS doctor following the evolution. The mortality rate was around 15%.<sup>31</sup> The ineffectiveness of Ding-Schuler, his amateurism in the dosing of the inoculated quantities of *Rickettsia prowazekii* without any relation to the actual bite of a lice only achieved one result: Ding-Schuler caught typhus himself. Far from being as reckless as Rudolf Weigl, he did not seek to take advantage of his illness to continue the experiments on himself. He temporarily abandoned the direction of operations to his assistant, Waldemar Hoven, even less capable than himself. Terrified about a possible contagion, Captain SS took the opportunity to stop “scientific” research on typhus by burning all the reserves of infected lice.

For his part, Ding-Schuler was slowly recovering from his disease, while admitting at least not having the necessary knowledge to find an effective vaccine. An internship at the Pasteur Institute in Paris did not help him in any practical way, as the skills gap with French doctors was too great.<sup>32</sup> Ding-Schuler did not achieve any convincing results, except for catching typhus himself, murdering hundreds of prisoners in cold blood, and committing suicide in April 1945.<sup>33</sup>

## RESISTANCE THROUGH SCIENCE

### *Wehrmacht's interest in the Pasteur Institute*

The other solution aimed at reproducing a foreign vaccine was put to good use during the occupation of France. The Germans were very interested in the Pasteur Institute in Paris, which had been active throughout the world for the previous century. Its director, Professor Jacques Tréfouël, tried by all means to curb the ardour of the enemy. There was the subject of specific requests: “Agreement on standardization in

---

<sup>29</sup> In addition to the French serum of Giroud, Durand and Sparrow, several experimental vaccines were available worldwide in the early 1940s, notably in Denmark and Romania. The most advanced was that of the American bacteriologist Herald Cox, used by Allied troops from 1942.

<sup>30</sup> E. Kogon, *L'État SS*, Paris 1993, p. 354.

<sup>31</sup> A. Allen, *The Fantastic Laboratory of Dr. Weigl*, p. 235.

<sup>32</sup> See J.-Ch. Fouquier, *La Guerre des scientifiques*, Paris 2019.

<sup>33</sup> See P. Aziz, *Les Médecins de la Mort*, vol. III: *Des Cobayes par millions*, Genève 1976.



the field of vaccines and other bacteriological products,” “Elimination of the obstacles that currently prevent the free exchange of vaccines between the two countries,” “Mutual assistance in case of difficulties for reciprocal provision at the moment of epidemics.”<sup>34</sup> The opportunity for such collaboration arose from the beginning of the occupation, with a vast epidemic of diphtheria affecting Europe and especially Germany. The Pasteur Institute then had one of the most effective antidiphtheric vaccines in the world, made by bacteriologist Émile Roux using a horse serum. Interested, Wehrmacht required several thousand liters of the antidiphtheria vaccine. The director of the Pasteur Institute in Paris, Jacques Tréfouël, drowned the affair for more than a year under an administrative flood of letter exchanges, leading to a biased agreement: “[It would be] of course that the German army would supply the horses that were by us immune and the serum produced by these horses would be given to the German authorities. Deliveries of horses in poor health resulted in a slaughter and the German army received, in the end, very little antidiphtheria serum.”<sup>35</sup>

Involved in the resistance, as were 11% of the members of the Pasteur Institute (a remarkable figure in occupied France<sup>36</sup>), Jacques Tréfouël tried to limit deliveries of the vaccine designed by Hélène Sparrow and Paul Durand to the Pasteur Institute in Tunis. Production was carried out at La Roche Beaulieu in the Dordogne, under an agreement with the German authorities to vaccinate French prisoners in Germany. In total, 2,200,000 doses were produced until the end of the war, enough to vaccinate 750,000 people.<sup>37</sup> Only ten liters of serum were delivered every week from 1943 until the liberation of Paris in August 1944 – a quarter of the production – quantities that were also derisory to vaccinate the entire Wehrmacht.<sup>38</sup>

Although most of Europe quickly succumbed to the Nazi tide, Tunisia was relatively spared the horrors of war. Placed under the French Protectorate since 1881, the country came under the control of Philippe Pétain’s collaborationist government in Vichy in 1940, without being occupied by Hitler’s Germany. Medical research continued at the Pasteur Institute in Tunis under the direction of Paul Durand, particularly on typhus. Research on rabbit lungs was remarkably successful. Quickly, 50,000 animals were inoculated, making it possible to produce the unprecedented total of 7,000,000 doses.<sup>39</sup> Paul Durand managed to get to the Pasteur Institute in Paris to inform his colleague Paul Giroud. Shortly afterwards, the Institute published the discovery of the “Durand-Giroud vaccine,” a name that concealed the decisive role

---

<sup>34</sup> IP, FR AIP TRE.GU, Direction Jacques Tréfouël, *Lettre au conseiller Joulin, Juge d’Instruction auprès de la Haute Cour*, Paris, 25 July 1945.

<sup>35</sup> *Ibid.*

<sup>36</sup> This is five times more than the 2 to 3% of Resistance fighters counted in the French population during the Second World War. N. Chevassus-au-Louis, “La Résistance à l’Institut Pasteur – Une confrontation de la mémoire pastorienne aux sources archivistiques,” *Bulletin de l’Association des Anciens élèves de l’Institut Pasteur* 2007, no. 92, p. 118.

<sup>37</sup> M. Lamy, “Une épopée pastorienne : l’annexe de la Roche-Beaulieu de 1941 à 1975,” *Bulletin de l’Association des Anciens élèves de l’Institut Pasteur* 2002, no. 173, pp. 181–186.

<sup>38</sup> N. Chevassus-au-Louis, “La Résistance à l’Institut Pasteur,” p. 123.

<sup>39</sup> IPP, FR AIP GRP, *Eloge de Paul Giroud*, p. 216.

played by Hélène Sparrow-Germa. According to her daughter, this strange omission, if not fundamentally unjust, was the inelegant act of Dr Giroud himself:

Dr. Durand made a trip to Lyon during the German occupation. Mama entrusted him with her important publication about the typhus vaccine. This publication was to be signed by her and Durand. Dr. Durand did indeed manage to travel from Lyon to Paris with this publication of Mama's, which he brought to Dr. Giroud. Shortly afterwards it appeared under the names Durand-Giroud. When Mama spoke to Giroud about it after the war, he said, after a tasty *mea culpa*, "What do you want Madame, the temptation was really too strong..."<sup>40</sup>

### *Resistance, research and recognition*

Hélène Sparrow-Germa continued her work and wrote scientific articles, which were smuggled to France. She also resisted the Axis armies, which occupied Tunisia from November 1942. But not all the soldiers of the *Wehrmacht* were stubbornly willing to serve Adolf Hitler. This was particularly the case for a number of Poles, forcibly conscripted into the German army, who had little desire to leave their lives in an unknown country. Some of these would-be deserters could count on the help and hospitality of Hélène Sparrow-Germa. Her husband was mobilized in Algeria, and the microbiologist decided to hide both French resistance fighters and Polish deserters who had been forced into the German army – thus fully assuming her dual nationality. Openly defying the occupation authorities, the laboratory head also welcomed French personalities in exile into her home, including the famous writer André Gide. Invited to dinner on several occasions, Gide praised her "exquisite" personality, capable of easing the torments of the German occupation: "[Thanks to her], I got through this time of trial almost easily."<sup>41</sup>

With the Allied landing in North Africa in November 1942, Tunis quickly became the focus of the bloody Tunisian campaign, which lasted until May 1943. Solidly held by powerful German elite units, the capital repelled the Allied offensives for many months. For the civilians, the conditions of survival were particularly difficult, with multiple food shortages added to the Allied bombardments. On 1 January 1943, Hélène Sparrow-Germa miraculously escaped death, as André Gide testified:

A bomb has just fallen on the house of Mrs Sparrow, the eminent doctor . . . Surprised while still in bed, where a severe headache was lingering, she had to flee hastily in her pyjamas. The bomb was buried in the ground without exploding, bursting the cellar of the building. There is talk of exploding it, and a cordon of officers is keeping the evacuated block at bay . . . It is hoped that the explosion caused will not do too much damage to Mrs Sparrow's flat.<sup>42</sup>

2,200,000 microbiologist finally escaped the aerial bombardments and witnessed the liberation of Tunis by the British on 7 May 1943. That same year, an epidemic of recurrent fever of mysterious origin swept through Tunisia until 1946. Suspecting

<sup>40</sup> IPP, FR AIP SPA, Letter from Marie Bogna Seiler to unknown recipient, 29 November 1970.

<sup>41</sup> A. Gide, *Journal 1939–1949*, vol. II, Paris 1954, pp. 192, 241.

<sup>42</sup> *Ibid.*, p. 161.

contamination as a result of the vast population movements linked to the war, the microbiologist went to Ethiopia and confirmed the similar identity of the relapsing fever strains. Her research finally made it possible to define the distribution areas of the different forms of fevers in North and East Africa.<sup>43</sup> Hélène Sparrow-Germa's scientific work from the beginning of her career was brilliantly rewarded at the end of the Second World War with her admission to the prestigious Royal Society of Medicine in London.<sup>44</sup>

In 1947, at the age of 54, the microbiologist was retained as head of the laboratory at the Pasteur Institute in Tunis on an exceptional basis, because of her remarkable results. Now known worldwide, the Franco-Polish scientist was visited by American and English bacteriologists, and from 1949 she specialized in BCG, a vaccine against tuberculosis.<sup>45</sup> This happy era lasted only a few years. The life of Hélène Sparrow-Germa seemed to be fatally marked by the seal of war. Since the victory of May 1945, North Africa has been shaken by revolutionary unrest. In Algeria, the riots degenerated in 1954 into a new colonial war. In Tunisia, Philippe Germa, her husband, was briefly arrested. An independence protocol finally brought French rule to a peaceful close on 20 March 1956, but the couple decided to abandon the boiling African continent for the calm of Corsica. That same year, the microbiologist undertook a final mission to Ethiopia to study the outbreaks of relapsing fever and then retired. Seriously ill and weakened by a long life dedicated to science, Hélène Sparrow-Germa died in Bastia on 13 November 1970.<sup>46</sup> "All the experimenters of typhus and recurrence will keep a faithful memory of her work, her charm and her enthusiasm,"<sup>47</sup> wrote Paul Giroud shortly afterwards, perhaps wishing to redeem his inglorious attitude towards her during the war.

## CONCLUSION

Born Polish, Hélène Sparrow-Germa showed a deep patriotism throughout her life, which was later, merged with her loyalty to her second homeland, France. Robert Debré concludes his tribute to his colleague and friend with the same remark:

Hélène Sparrow-Germa was one of those who, over the centuries, have achieved in their lives the spiritual union of France and Poland. There was no contradiction in her thinking between her attachments or rather her love for her Polish homeland and her affection for France, her adopted country. Such was the life of this woman of great distinction who shone with her intelligence, her knowledge and her scientific discoveries. [She] was also an attractive personality

<sup>43</sup> IPP, FR AIP SPA, A. Chadli, *Hélène Sparrow-Germa*, pp. 309–310.

<sup>44</sup> *Ibid.*, p. 370.

<sup>45</sup> IPP, FR AIP SPA, r. Debre, *A la mémoire d'Hélène Sparrow, polonaise et française*, p. 8.

<sup>46</sup> *Ibid.*, p. 9.

<sup>47</sup> IPP, FR AIP SPA, A. Chadli, *Hélène Sparrow-Germa*, pp. 309–310.

with good grace, attractive looks, beauty, manners, wit and conversation in which humour and depth of thought were combined.<sup>48</sup>

The author of many scientific discoveries, including an effective vaccine against typhus, Helene Sparrow-Germa showed a powerful determination throughout her life, visible both in her scientific career and in her personal attitude during wartime.

Perhaps the most salient element of this wartime prism is her research into a typhus vaccine during the Second World War, with the little-known role played by the Pasteur Institutes in Paris and Tunis in the resistance to Nazi occupation. The study of the role of Pastorianism in the evolution of medicine during the Second World War was only recently taken into account in a research program initiated by the University of Manchester in 2020. This theme had been neglected and, until recently, had found little echo in a historiography that remained the prerogative of military doctors who combined personal testimony with analysis. The period of the Liberation, marked by a strong involvement of Pastorianism in the reconstruction, is part of the scope of study.<sup>49</sup> The University of Manchester research project represents a major renewal of health research during the second world war.

## BIBLIOGRAPHY

### Archival Documents

#### Archives from Pasteur Institute

- FR AIP DUR, Paul Durand (1886–1960)
- FR AIP GRP, Paul Giroud (1898–1989)
- FR AIP SPA, Hélène Sparrow (1891–1970)

### Literature

- Allen A., *The Fantastic Laboratory of Dr. Weigl*, New York 2014.
- Aziz Ph., *Les Médecins de la Mort*, vol. III: *Des Cobayes par millions*, Genève 1976.
- Chevassus-au-Louis N., “La Résistance à L’Institut Pasteur (1940–1944) – Une confrontation de la mémoire pastorianne aux sources archivistiques,” *Bulletin de l’Association des Anciens élèves de L’Institut Pasteur* 2007, no. 92, pp. 118–127.
- Chwalba A., *1914–1918: An Anatomy of Global Conflict*, Krakow 2014.
- Foucrier J.-Ch., *La Guerre des scientifiques*, Paris 2019.
- Gide A., *Journal 1939–1949*, vol. II, Paris 1954.
- Goodall E.W., “Typhus Fever in Poland 1916–1919,” *Section of Epidemiology and State Medicine* 1920, no. 13, pp. 261–276.

<sup>48</sup> IPP, FR AIP SPA, R. Debre, *A la mémoire d’Hélène Sparrow, polonaise et française*, p. 9.

<sup>49</sup> *Colonial and Transnational Intimacies: Medical Humanitarianism in the French external Resistance* (Manchester University), powered by the British Arts and Humanities Research Council.

- Kogon E., *L'État SS*, Paris 1993.
- Kryński S., "Rudolf Weigl (1883–1957)," *Medycyna Doświadczalna i Mikrobiologia* 1967, no. 19, pp. 233–239.
- Lamy M., "Une épopée pastorienne : l'annexe de la Roche Beaulieu de 1941 à 1975," *Bulletin de l'Association des anciens élèves de l'Institut Pasteur* 2002, no. 173, pp. 181–186.
- Lindenmann J., "Women Scientists in Typhus Research during the First Half of the Twentieth Century," *Gesnerus* 2005, no. 62, pp. 257–272.
- Mathis M., *La vie des poux*, Paris 1955.
- Morange M., *Pasteur*, Paris 2014.
- Patterson D.K., "Typhus and Its Control in Russia, 1870–1940," *Medical History* 1993, no. 37 (4), pp. 361–381.
- Perrot A., Schwartz M., *Pasteur à la plage. Le monde des microbes dans un transat*, Paris 2022.
- Perrot A., Schwartz M., *Pasteur. L'homme et le savant*, Paris 2022.
- Perrot A., Schwartz M., *Pasteur et Koch. Un duel de géants dans le monde des microbes*, Paris 2014.
- Perrot A., Schwartz M., *Pasteur et ses lieutenants. Roux, Yersin et les autres*, Paris 2013.
- Polak A. et al., *Typhus Works of Rudolf Weigl, PhD, Ludwik Fleck, MD, and Eugeniusz Łazowski, MD, against the Nazis*, <https://doi.org/10.1016/j.clindermatol.2022.02.016> [accessed: 2 December 2022].
- Soulier J.-P., *Jacques Monod. Le choix de l'objectivité*, Paris 1997.
- Sparrow H., "Immunization against Scarlet Fever with the Aid of the Scarlet Fever Toxoid," *Comptes Rendus des Séances de la Société de Biologie et de ses filiales* 1927, no. 97, pp. 957–959.
- Sparrow H., "Étude du foyer éthiopien de fièvre récurrente," *Bulletin of the World Health Organization* 1958, no. 19, pp. 673–710.
- Sparrow H., Nicolle C., "Application au cobaye et à l'homme de la méthode de vaccination contre le typhus exanthématique par emploi d'intestins phéniqués de poux (méthode de Weigl)," *Archives de l'Institut Pasteur de Tunis* 1932, no. 21, pp. 25–31.
- Sroka S.T., "Sparrow (Sparrow-Kügelgen, Sparrow-Germa) Helena (1891–1970)," *Polski Słownik Biograficzny* 2002, t. XLI, pp. 39–40.
- Zaorska B., "Helena Sparrow-Germa (1891–1970)," *Postępy Mikrobiologii* 1995, no. 2, pp. 115–119.