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Quality Control and the Politics of Serum Production in France

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Louis Pasteur died on 28 September 1895 at the Pasteur Institute's facility at Garches outside Paris. Today, the visitor who makes the journey to this quiet Parisian suburb is reminded of Pasteur's prominent place in the history of French science by a memorial plaque mounted on the wall of the former cavalry stables. The founder of microbiology, at least according to the French version of this history, Pasteur revolutionized the conception of infectious disease and paved the way for the major therapeutic success stories of twentieth-century medicine, from antisepsis to antibiotics. Pasteur's room at Garches, preserved in the state it was in when he died, is bathed in a calm silence broken only by the occasional passage of a train on the tracks that run behind the building, or the honking of one of the geese on the grounds of the estate. It is easy to imagine Louis Pasteur living out the end of his life in this tranquil atmosphere, with the repose of his final weeks interrupted only by visits from friends, colleagues and relatives coming to pay their last respects to the great hero of French science. But in fact, the tranquillity that envelops the buildings at Garches today is a far cry from the atmosphere that reigned at the time of Pasteur's death. In September 1895, production of the diphtheria serum, the largest project the Pasteur Institute had ever undertaken, was in full swing at the site. According to notes found in the administrative notebooks, the Institute produced some 7500 litres of blood containing serum for the treatment of diphtheria in 1895, a volume not equalled again until 1899, and then for all the sera produced by the Institute.\(^1\) This industrial-style production of serum meant not only that there were over 100 horses living in the renovated and enlarged stables only yards away from Pasteur's deathbed, but an equally short distance away on the other side of the building there were around 3000 guinea pigs in cages. According to the caretaker, a certain Monsieur Pernin, 'These guinea pigs, shut up in long iron cages, produce a deafening sound'.\(^2\) Indeed, the journalist from *Le Matin* who reported M. Pernin's words concluded his article with an entertaining story about what happened at the end of his visit. Upon his departure, he came across some residents of a neighbouring retirement home...
who asked him whether the Pasteur Institute was planning to move patients into the facilities at Garches. When the journalist enquired whether they would like that, the pensioners replied that at least sick people would make less of a racket.

With this level of noise, it is hard to see how an ailing Louis Pasteur could have managed to sleep at night, let alone pass his last days in calm tranquillity. Someone with a penchant for conspiracy theories might even imagine the situation as part of a plot by Emile Roux to dispose of the ageing Pasteur – not only his mentor, colleague and then director at the new Pasteur Institute, but also, in certain senses his rival.³ While Roux would not himself become director of the Institute until 1904, he had assumed the mantle of the founder’s scientific heir well before Pasteur’s death in 1895, rising to prominence precisely because of the public success of the Institute’s treatment for diphtheria.⁴ Conspiracy theories aside, the fact that Pasteur died on the site of the large-scale production of diphtheria serum is highly symbolic in terms of the history of the Pasteur Institute. The founding of the Institute coincided with Pasteur’s decline and his withdrawal from public life, largely due to illness, ushering in a new generation of Pastorian microbiologists who would shape the future of the institution, including Chamberland, Metchnikoff, Duclaux, Roux and Calmette.

An important part of the institutional history of this period turned around the production of diphtheria serum that started in earnest at the end of 1894. Indeed, it was this serum production that would ensure the financial security, if not the survival, of the Institute at the close of the nineteenth century, enabling its successful passage into the twentieth.⁵ As Weindling has already argued, the French institution was able to raise a great deal of capital through its charitable fundraising drives, but regularly struggled to cover its running costs – a model that he contrasts with the financial situation of Robert Koch’s Institute for Infectious Diseases in Berlin where the state provided less generous capital investment but more ample long-term financing.⁶ As we shall see, the dramatic discovery of an innovative treatment for diphtheria was mobilized to generate a very large sum of money for the Pasteur Institute (and, coincidentally, for other institutions as well) through charitable donations that flooded in from all over France as well as the rest of the world. This money was used to launch the large-scale production of the serum for treating diphtheria at the specialized plant in Garches where Pasteur died. Ironically, therefore, Pasteur’s name was used to raise the funds that effectively transformed his last months into a purgatory.⁷

While the subscription, initiated by Gaston Calmette (a leading journalist and brother of the Pastorian Albert Calmette) and successfully run by Le Figaro, ensured the financial security of the Pasteur Institute, the Institute was expected to keep its side of an implicit pact made with the French people. The new hero of this cause, Emile Roux, personified the Pasteur Institute’s successful treatment of diphtheria – particularly through the publicity