

Serafín Buisen's clinic for nervous diseases: the Federico Rubio y Galí Institute and medical specialisation in Spain

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ABSTRACT

Federico Rubio y Galí (1827-1902), a prestigious surgeon and progressive politician, started his professional career at Hospital de La Princesa in Madrid. In 1896, his vocation for teaching led him to create, by means of public subscription, a modern, private, charitable hospital complex in the city suburbs. The Instituto de Terapéutica Operatoria (Institute of Surgical Treatment) brought together elite professors, promoted a secular nursing school, and launched the *Revista Iberoamericana de Ciencias Médicas* (1899-1936), which was an accurate reflection of the scientific development in Spain. In its yearbooks or *Reseñas* (Reviews), the institute reported its changes, advances, and projects. Dr Serafín Buisen, who died in 1904, was one of its first students and became an internationally renowned electrotherapist. Thus, Romain Vigouroux, the first official electrotherapist at La Salpêtrière, recommended that Buisen continue in Madrid the course of electrotherapy indicated by Charcot for the polymath Joaquín Costa. Following the example of Duchenne de Boulogne, Buisen moved from electrotherapy to neurology. Working at the institute's clinic for nervous diseases, in 1885 he studied the case of a patient with paralysis agitans, the term used by James Parkinson in 1817. This was the first mention of this disease in Spain. As an "up-to-date neurologist," in 1899 Buisen diagnosed a patient with *spondylose rhizomélique*, today known as ankylosing spondylitis, only one year after the description by Pierre Marie.

KEYWORDS

Federico Rubio y Galí, Serafín Buisen, Instituto de Terapéutica Operatoria, history of neurology, electrotherapy

Introduction

Federico Rubio y Galí (Sanlúcar de Barrameda, Cádiz, 30 August 1827 - Madrid, 31 August 1902) became one of the most relevant figures of Spanish medicine in the early 19th century. A successful surgeon in Seville, at the age of 27 he entered politics with his family's liberal ideology (Figure 1); this ideology was in line with Joaquín Costa's regenerationism and the Institución Libre de Enseñanza, where Luis Simarro introduced him.¹ He successively became a councillor, parliamentary representative, and

senator, and finally travelled to Europe in 1859. After supporting the uprising of general Riego, he took exile in London, Paris, and Breslau, where he met such renowned surgeons as Ferguson, Velpeau, and Purkinje. He was convinced of the precariousness of Spanish science and the need for advanced medical training. On his death due to "uric diathesis and cardiac arrests" at 7:30 in the morning on 31 August 1902, the *Revista Iberoamericana de Ciencias Médicas*, which he himself had founded, dedicated a heartfelt text mentioning

his countless academic and honorary degrees obtained throughout his 75 years. It also underscored “his iron will, deep love for his homeland, and his desire for union for the Ibero-American family.”^A

One of Federico Rubio's outstanding qualities was his capacity for innovation: he created in the outskirts of Madrid a hospital complex with clean and peaceful pavilions, over a gentle hill with a view towards the blue mountains as painted by Velázquez. Popularly known as Instituto Quirúrgico de la Moncloa, it was a private institution and, in certain cases, a charity institution. It was the opposite of the old building of Hospital San Carlos, and the complaints by its dean José de Letamendi to the minister for development: “our needs are increasing while our resources decrease [...] relying on gratuities and bonuses.” Paediatric consultations resembled “true dungeons,”² not to mention the “ward for the insane” of the Hospital Provincial de Madrid, “a disgusting, gloomy limited space.”³

The aim of this study is to underscore the role of Federico Rubio in the implementation of medical specialisation in Spain,⁴ and particularly the work of Dr Serafin Buisen y Tomaty at the Instituto de Terapéutica Operatoria, where he was in charge not only of electrotherapy but also of the clinic for nervous diseases (1885), one of the first in Spain to be dedicated to the diseases of the nervous system.

Sources of information and development

A search was conducted on the bibliographic information service of the National Library of Spain. I manually reviewed the first eight volumes of *Revista Iberoamericana de Ciencias Médicas* (1889-1936), a scientific publication of the Instituto de Terapéutica Operatoria, at the Faculty of Medicine of the Universidad Complutense de Madrid. The recent exhibition on Federico Rubio y Galí, organised by the Real Academia Nacional de Medicina de España (from 1 July to 15 October 2024) represented an interesting update.

Results

The Instituto de Terapéutica Operatoria

The four consultations on the ground floor of the Hospital de La Princesa in Madrid, where he had spent 16 years (1880-1896) and gathered his first students, may have been insufficient for him (Figure 2). With the support of the minister of the interior, Francisco Romero y

Robledo, and despite the complaints of Dr Cortezo in *El Siglo Médico*, Federico Rubio planned to build a modern private and charity hospital complex with a focus on training. An attractive centre in the suburbs of the city of Madrid, it stood on the small hill of La Moncloa with a view towards the Guadarrama mountains.⁵ All he needed was funding. Professors and students held an end-of-year banquet on 16 June 1896, opening it to the public. They raised a considerable amount, 90 000 pesetas.^B One year later, on 1 July 1896, the Royal Family witnessed the laying of the first stone.⁶ Various pavilions were built on a 165 912 m² plot provided by the State (Figures 3 and 4). The Instituto Rubio, as it was colloquially known, had a dual aim. First, as a charity institution, it would accept patients no matter their social status. Its motto underscored this aim: “everything for the patient, and the greater the need, the greater the help.” Second, as a teaching centre, it could accept students upon payment of an enrolment fee of 250 pesetas. There, they received training from a prestigious group of specialists, in addition to having access to vast clinical material.

He did not forget the administrative aspects. A group of women would attend the material needs of admitted patients, as well as other moral and religious aspects. Another board of protectors was in charge of the preservation of the building. At the institute, one caretaker was assigned to each room, in charge of “assisting, changing the glasses, and transferring the patient from one bed to another.” In 1896, Dr Rubio decided to create the Santa Isabel de Hungría Nursing School as a secular rather than as a religious institution, which was more common.^C

^AObituary by Federico Rubio: *Revista Iberoamericana de Ciencias Médicas*, 1902, vol. 8, numbers 15 and 16, unsigned.

^BThe son of Dr Ángel Pulido Fernández (a bust can be found in Madrid's Retiro park) was a friend of Federico Rubio y Galí, to whom he dedicated a chapter in his father's biography. He secured him a donation of 80 000 pesetas for the construction of the Instituto de la Moncloa. During the end-of-year banquet, Rubio y Galí thanked him with a kiss on the back of the neck: “Pulido, you are the only one who understands me.” Source: Pulido Martín A. *El doctor Pulido y su época. Prólogo de don Jacinto Benavente*. Madrid: Imprenta F. Doménech, S.A.; 1945. p. 164.

^CUp to 1886, this work was assumed by religious orders, such as the Daughters of Charity of Saint Vincent de Paul or the Servants of Mary, among other institutions. The requirements for a young woman to be accepted to the Institute included: age between 23 and 40 years; being able to read, write, and calculate; belonging to the middle class; and “being robust and docile, in addition to having impeccable morality and strong Christian beliefs.” Twenty-four external nurses were selected (for an honorary, unsalaried position), in addition to 8 internal nurses, whose salary was paid by the institute. Enrolment was to be formalised at number 22, Calle del Pez. Students were provided with study manuals and, after 2 years of training, received a certificate enabling them to work as professionals.

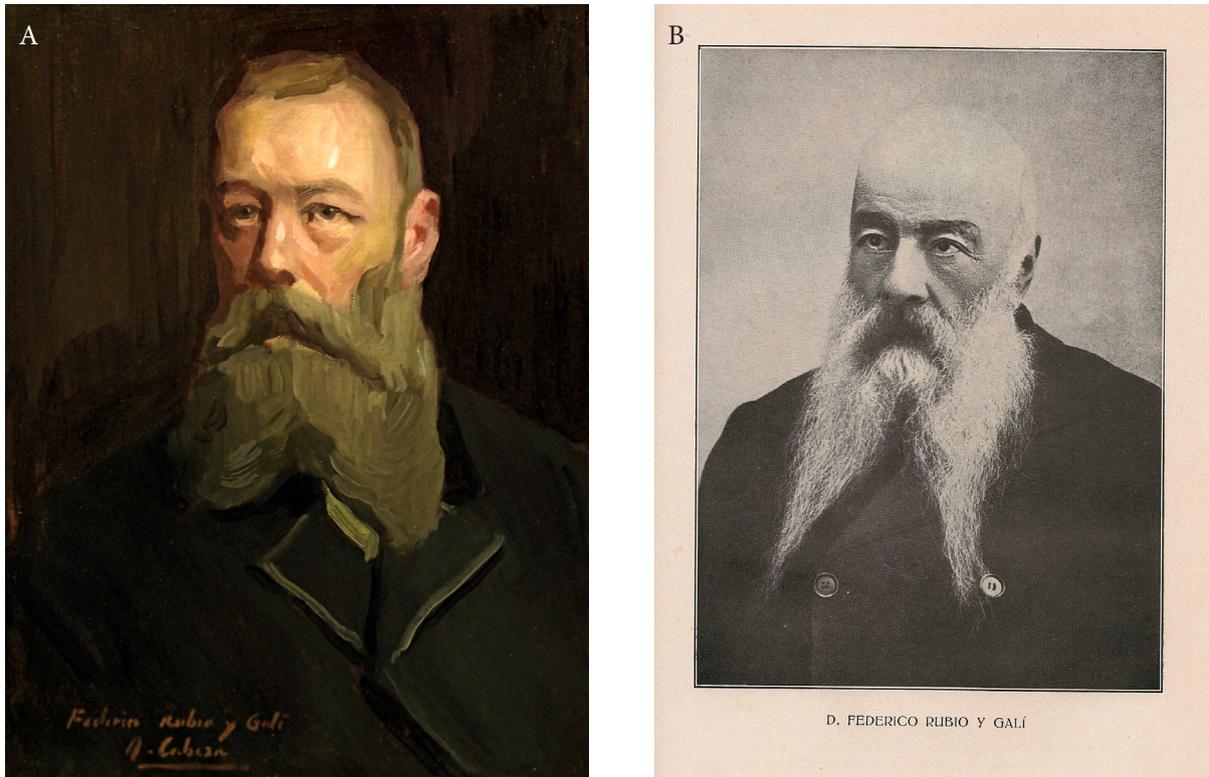


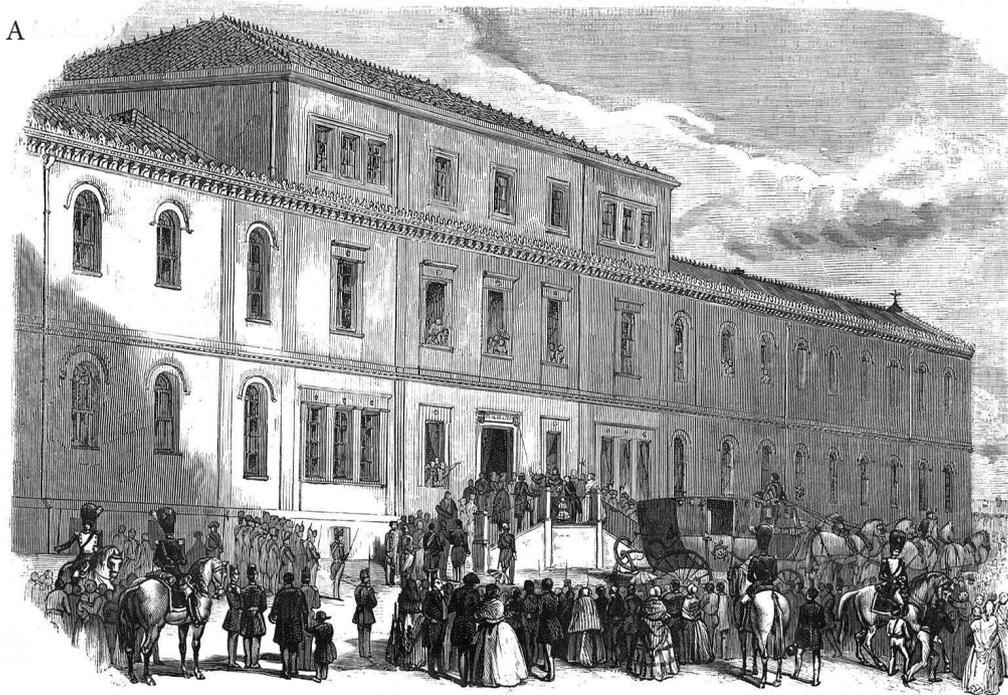
Figure 1. A) Painting of Federico Rubio y Galí, by Alejandro Cabeza. Taken from the exhibition held at the Real Academia Nacional de Medicina de España on the 150th anniversary of his designation as member. B) Photograph of a Federico Rubio in old age, with his characteristic long, forked beard, published in *Revista Iberoamericana de Ciencias Médicas* on the occasion of his death.

It was the first nursing school in Spain, initially implemented at Hospital de La Princesa and later in many other hospitals in the country.⁷ The *Revista Iberoamericana de Ciencias Médicas*, a scientific publication of the Institute that was initially a quarterly and subsequently a monthly publication, was luxuriously illustrated with black-and-white and coloured engravings, drawing, and pictures. Some 50 authors contributed throughout its history, including Ramón y Cajal, Simarro, Olóriz, and Gómez Ocaña. With 380 issues, it represents the best medical publication of that time.

Each year, the Institute published its *Reseñas*, reports with exceptional documentary value on occurrences at the Institute: advances, reviews of the medical literature, and especially, detailed accounts, as though registered by a stenographer, of clinical observations and significant surgical events. Federico's language was sometimes

picturesque, as illustrated in his report of the patient Saturnina Hernández: "an old lady consumed by that mummification caused sometimes by age, with a little body and wrinkled face." The lady was 78 years old (*Reseña* of 1882, p. 87).

In 1882, Federico Rubio dedicated a text to the politician and surgeon Francisco Méndez Álvaro that flaunted his successes, such as the new anatomical theatre, but especially one request: his aim was, pending authorisation, that the Institute would assume the graduation of students. To achieve this, he offered a vast teaching staff (Figure 5). In 1885, the staff of the Instituto de Terapéutica Operatoria included 5 specialists: in addition to Serafín Buisen, Rafael Ariza y Espejo (1826-1887), a pioneer in otorhinolaryngology in Spain, Eugenio Gutiérrez y González de Cueto (1851-1914), a key figure in the development of gynaecology, Martínez Ángel and Julián



SOLEME INAGURACION DEL HOSPITAL DE LA PRINCESA.



B Madrid.-Hospital de la Princesa.

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Figure 2. Hospital de La Princesa (c. 1930), at Paseo de Areneros (today, Calle de Alberto Aguilera). A) The hospital was inaugurated in 1857 by Queen Isabella II, who was unharmed in the attack by the priest Merino in the Basílica de Atocha during the presentation of the Princess of Asturias, Isabella of Bourbon and Bourbon. In 1936, patients were evacuated to transform it into barracks. B) Demolished in 1962, it remained closed for years, in front of the famous La Flor cinema, an unforgettable memory for the children of the neighbourhood. Source: *La Gatera de la Villa*, fotoMadrid.

Zabala, whose lives left no remarkable trace. In a few years, this number increased to 9, thus becoming an exemplary centre in the training of specialists and nurses. It is a longstanding tradition in Spain for physicians to be paid poorly and late. In reference to Ariza and Buisen, one can read: “They work only to cultivate their hobby [...] and for the good they bring.”

Serafín Buisen, electrotherapist

Serafín Buisen y Tomaty (?-1904) was one of the physicians practising at the Instituto de Terapéutica Operatoria de la Moncloa. To date, Buisen’s date or place of birth have not been documented; not even a picture of him could be found. In the *Reseña* of the Institute’s second year, published in 1882, Buisen is already mentioned at the head of the Electrotherapy Service, an essential treatment that was not accessible for some patients due to their limited financial resources. Buisen’s renown in the specialty expanded beyond his work at Instituto Rubio. For instance, an article published in 1889 in *El Liberal* reported the creation of an electrotherapy service at the Casa de Socorro (first aid post) in the Buenavista district, on Calle Barquillo in Madrid. The post was limited to patients from the municipal charity, and had been promoted by the district president Leonardo Pérez. According to the article:

Luckily, Madrid has today a complete electrotherapy service with the latest advances and about which we may say without being immodest that it is somewhat superior to some of the most relevant services abroad [...]. The head of the section, Prof Dr Serafín Buisen, dedicated to the study of electricity and its medical applications, travels abroad to observe and study the most important advances of the specialty, to purchase all manner of machines and devices, and to conduct experiments, thus gathering a great deal of knowledge and expertise in the field. With more patients and the complete installation of static and dynamic electricity and magnetic devices and machines available to Dr Buisen at the Casa de Socorro clinic, he will be able to further his studies and observations, the benefits of which would be massive, as electrotherapy cures diseases that were previously incurable with other medical means [...]. The clinic is only for patients attended by the municipal charity; everything is intended for the benefit of the poor, who have greater need (as far as electrotherapy is concerned) than the rest of the patients in Madrid. The president of the Casa de

Socorro of the Buenavista district, Leonardo Pérez de Mier, has largely contributed to making this clinic a reality.

Buisen’s prestige even arrived at La Salpêtrière in Paris. The renowned Joaquín Costa (1846-1911), a central figure of democratic regenerationism in Spain, had travelled, with the mediation of Simarro, to know the opinion of Charcot on his neuromuscular disease.⁸ After the death of Duchenne de Boulogne in 1875, Charcot opened a electrotherapy laboratory at La Salpêtrière under the leadership of Romain Vigouroux (1831-1911), the first official electrotherapist from 1880.⁹ In André Brouillet’s famous painting *A Clinical Lesson at the Salpêtrière* (1886), Vigouroux can be seen close to Charles Féré, on his left, and Gilles de la Tourette, on his right.¹⁰ Daniel Urrabieta Vierge (Madrid, 1851 - Boulogne-sur-Seine, 1904), a Spanish illustrator living in Paris, was treated at La Salpêtrière by Vigouroux after a stroke; Urrabieta drew his doctor during an electrotherapy session (Figure 6).¹¹ Once Joaquín Costa’s treatment was completed, Vigouroux recommended that he continue sessions with Serafín Buisen in Madrid.

Serafín Buisen’s clinic for nervous diseases

In addition to his role as an electrotherapist, Buisen led an outpatient clinic for “afectos nerviosos” (patients with nervous diseases). Of the five definitions of the dictionary of the Royal Academy of the Spanish Language of the term “afecto” (patient), one defines it as “the person who suffers or may suffer some disease”; in other words, a patient with a neurological disease. In line with this, in an article published by Buisen in 1899, he refers to himself as “professor of neuropathies.” Three neurological works by Buisen were identified.

At the 1882 Medical Congress in Seville, he presented the communication “A case of chorea cured with static electricity.” He ensured that “its use in chorea is always associated with a flattering success.”¹²

As mentioned above, one peculiarity of *Revista Iberoamericana de Ciencias Médicas* was to reproduce word-for-word the conversations between specialists during some interesting clinical presentations. This is the case of paralysis agitans he presented in 1895 and reported in the *Reseña* of the fifth year¹³(p803-804):

“Dr Buisen has admitted this patient called Nemesio Cano, who is occupying bed no. 2, in case you are interested in studying a good case of paralysis

agitans." Buisen apologised to the professor for using a bed that may be necessary for surgery, in which case he himself would follow up the patient at the clinic. Dr Rubio answered: "He can use the bed for as long as you deem necessary. Incurable diseases are those that need to be studied in more detail, and I would be pleased for you to study and test as much as you can." We should recall that Federico Rubio was a surgeon, in addition to being the director or owner of a precarious Institution. Even its director lacked a car of his own.

An article published in 1899 in *Revista Iberoamericana de Ciencias Médicas* illustrates the images of two patients with a marked trunk hyperflexion (Figure 7). On the left, the man shows a pronounced antecollis and flexion of thighs on the hips. On the right, a relatively young woman shows a dorsolumbar kyphosis that is so pronounced that she is forced to look down.

Discussion

Serafín Buisen, neurologist

The presentation at the 1882 Congress in Seville of cases of chorea cured with electrotherapy suggests that the patients may be children with episodes of Sydenham chorea, which was already frequent at the time of William Richard Gowers (1845-1915).¹⁵ Today, it is considered a self-limited disease caused by *Streptococcus pyogenes* and anti-basal ganglia antibodies. The process usually resolves within two to six months,¹⁶ although it is not exceptional for mild involuntary movements to persist, which would undermine Buisen's position on complete resolution with electrotherapy. Years later, the Catalan physician Francisco de Paula Xercavins Rius (1855-1937) also considered radiotherapy as a specific treatment for St. Vitus' dance. His cases, observed in the city and province of Barcelona, were the subject of a communication presented at the 2nd International Congress of Electrotherapy and Radiology in Milan in 1906.¹⁷ Xercavins' excellent treatise *Localización de las enfermedades del sistema nervioso* (Localisation of diseases of the nervous system) granted him the acknowledgement of Jean-Martin Charcot.¹⁸

During a clinical session in 1885, Rubio and Buisen presented the case of a patient admitted with paralysis agitans, exactly the same term used by James Parkinson (1755-1824) in *Essay on the shaking palsy*,¹⁹ a monograph published in 1817 whose distribution was initially limited



Figure 3. Instituto de Terapéutica Operatoria, erected on a hill in the Moncloa area. A long line of patients climbs to the main entry. In 1955, the Clínica de la Concepción (Today, Hospital Universitario Fundación Jiménez Díaz), was erected at the site.



Figure 4. Central pavilion at the Instituto de Terapéutica Operatoria.

to the United Kingdom.²⁰ In Europe, and probably Spain, the disease became more popular after Charcot's lesson of 12 June 1888 under the term "parkinsonism."²¹ In other words, *three years after* (emphasis added) the historical presentation of the patient Nemesio Cano. It was the opposite of the abundant observations of cases of parkinsonism that emerged after the epidemic of encephalitis lethargica (1920-1921).²² The description of Rubio and Buisen was probably the first case of Parkinson's disease reported in Spain.

Pierre Marie, already at the age of 45 years, became interested in the diseases of the osteoarticular system.²³ His 1898 publication *Sur la spondylose rhizomélique* (On rhizomelic spondylosis)²⁴ was followed only a year later by the observation of Serafín Buisen.²⁵ It reproduced a picture of the patient showing marked ventral flexion of the spine and hips (Figure 6)²⁶ and two other cases in early stages. This case would correspond today to ankylosing spondylitis or Foix-Chavany-Marie syndrome, a chronic

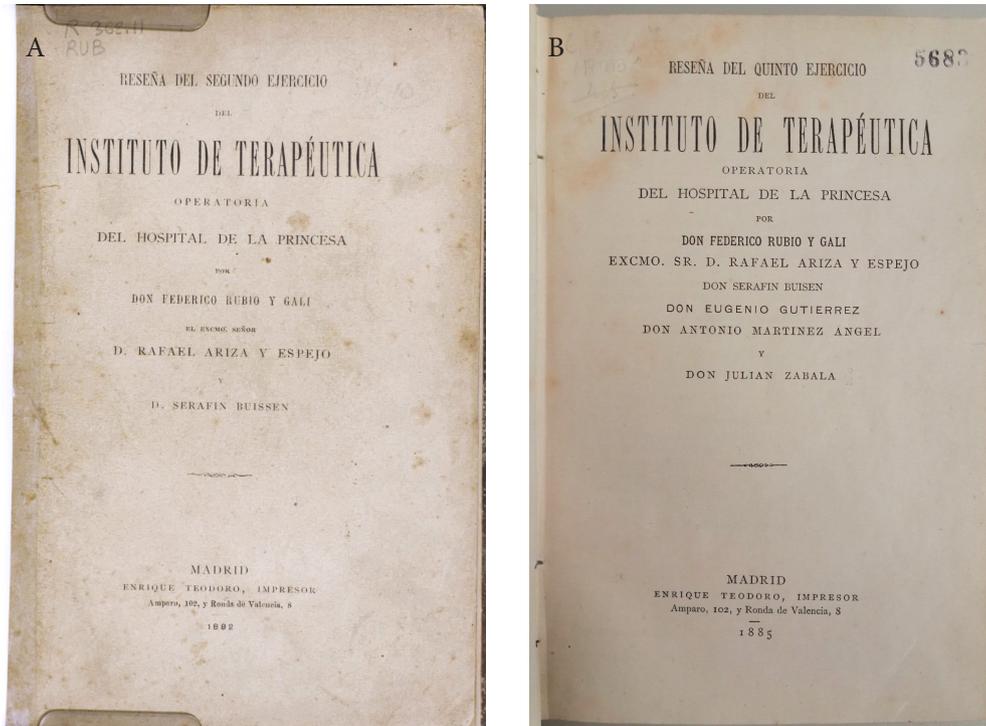


Figure 5. A) Serafin Buisen was the only specialist at the Institute, together with the otorhinolaryngologist Rafael Ariza y Espejo in 1882. B) Three years later, the number of specialists had grown to five. Source: *Reseñas* of the second and fifth years of the Instituto de Terapéutica Operatoria of the Hospital de La Princesa.



Figure 6. Drawing by the illustrator from Madrid David Vierge, made during his admission to La Salpêtrière Hospital due to a stroke. Wearing a cap, Dr Vigouroux applies an electrical shock to a woman who appears to be suffering. A terrified nurse witnesses the scene in front of a huge generator.

process with onset during childhood, presenting with calcification of spinal ligaments, and sacroiliitis, frequently associated with the HLA-B27 marker, and such complications as uveitis and aortic valve lesion.²⁷

In summary, throughout his life, Buisen was a physician with an undeniable professional prestige. In 1876, in a letter preserved at the Real Academia Nacional de Medicina de España, he was invited as representative of the institution to attend a session presented by the politician and naturalist Manuel María José de Galdo (1825-1895). He was acclaimed not only as an electrotherapist but also as a neurologist. The mother of the Marquess of Larios proposed to Serafín Buisen that he might act as an expert witness in the famous trial of 1888, in which important interests were at play. Buisen ultimately supported the diagnosis of general paralysis of the insane proposed by Hardy and Charcot.²⁸ Alfred Hardy, a renowned syphilographer, and the famous neurologist Jean-Martin Charcot had travelled from Paris to Malaga on 29 December 1887 to provide expert evidence. Presenting opposing opinions, the Spanish physicians Simarro, Escuder, and Vera also intervened. The relationship between Simarro and Charcot, established during Simarro's stay in Paris between 1880 and 1885, may have influenced Hardy and Charcot to undertake such a long journey.²⁹

Electrotherapists before neurologists: the electrical basis of neurology

In the nineteenth century, there were no “nerve doctors” but rather electrotherapists, who worked with the electrical underpinnings of neurology.³⁰ Duchenne de Boulogne (1806-1875) represented a starting point; to him, electrotherapy (and electrodiagnosis) opened the doors to neurology. Always carrying his “battery and spool,” he wandered around the hospitals of Paris looking for patients with rare forms of muscle atrophy. He published an article on the value of electricity applied to diagnosis and treatment in 1855 and, in 1864, he described the pseudohypertrophic muscular paralysis that bears his name.³¹ His influence on Charcot was key in steering the French physician's career towards the study of neurology.³² Not all electrotherapists ended up being neurologists. Wilhelm Heinrich Erb (1840-1921) experienced precisely the opposite: he was one of the pioneers of neurology in Germany and defended it as specific specialty, even founding in 1891 the *Deutsche Zeitschrift für Nervenheilkunde* (German Journal of Neurology).³³

His interest in neuromuscular disorders led him to practise electrotherapy, playing a significant role in its development.³⁴

In Spain, numerous professionals from Barcelona, Madrid, and Seville dedicated their careers to electrotherapy.¹⁷ However, in addition to Serafín Buisen, we may cite another two who were initially electrotherapists but ultimately became experts in clinical neurology. Eduardo Bertrán Rubio (1838-1909), author of *Electroterapia. Métodos y procedimientos de electrificación* (Electrotherapy: methods and procedures of electrification), a work published in 1872, addressed the electrotherapeutic treatment of neuralgia, inspired by the works of Duchenne de Boulogne.³⁵⁻³⁷ In any case, he was the first neurologist to be considered as such in the Real Acadèmia de Medicina i Cirurgia Catalana.³⁸ Lluís Barraquer Roviralta (1855-1928) enjoyed the support of Bartomeu Robert Yarzabal, a physician, nationalist politician, and mayor of Barcelona, to create an Electrotherapy Dispensary at the old Hospital de la Santa Creu in 1881. A year later, in 1882, it became the Department of Electrotherapy and Neurology. His significant work, influenced by Charcot and Marie, was analysed in great detail by his grandson Lluís Barraquer Bordas (1923-2010), also a neurologist. Noteworthy cases include a possible case of generalised dystonia in a street beggar (1897), the case of a woman with cephalothoracic lipodystrophy (1906), and studies of the plantar grasp reflex (1921) and idiomuscular response (1922), among other topics.^{39,40}

Destruction and death in Madrid's Parque del Oeste

The end of the Instituto de la Moncloa could not be more unfortunate. The area witnessed fierce clashes during the Battle of Madrid at the end of the Spanish Civil War, with the destruction of many buildings at the Ciudad Universitaria campus, the Hospital Clínico de San Carlos, and the Instituto itself, where the body of Federico Rubio was buried in a chapel.⁶ According to the Programa de Regiones Devastadas (Programme for Devastated Regions), in 1940, the owners of the land expressly waived their rights in favour of the State and, over their ruins, in 1955, the Clínica de la Concepción (today Fundación Jiménez Díaz) was built.

The physical destruction of the Instituto de la Moncloa under these miserable circumstances has not wiped out the example of Federico Rubió y Galí.^{41,42} He promoted

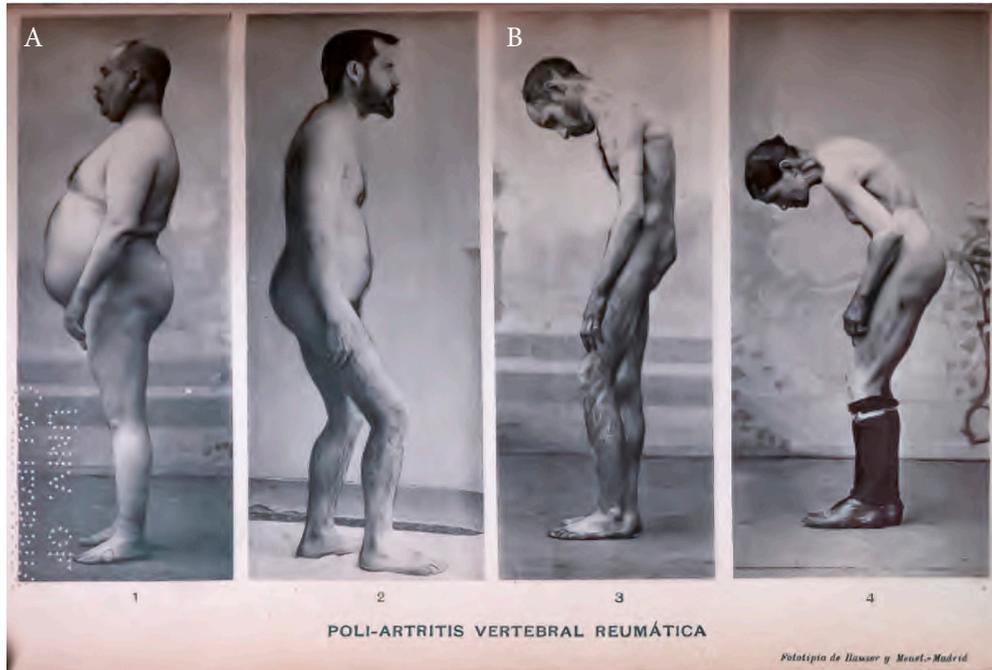


Figure 7. A) A case of rheumatoid arthritis of the spine in its initial stage, according to Dr Buisen in 1899. B) Advanced forms, with a patient showing pronounced ventral flexion of the trunk and neck, inspired by the publication by Pierre Marie a year earlier (left), and a young woman with severe axial hyperflexion of unknown cause (right), according to a presentation delivered by Serafín Buisen on 8 June 1889.



Figure 8. Monument to Federico Rubio. Hidden in a hollow among dense vegetation in Madrid's Parque del Oeste, the sculptural group replaces the former one destroyed during the war. An old man receives a flower bouquet from a thankful mother, who has one hand round the waist of a boy, and in the other carries an infant. The figure of Federico Rubio, sitting upon a throne, rests his right arm on the armrest, while holding in the left hand a scalpel and a lancet. A placard lists the surgeon's greatest achievements: extirpation of the ovaries (1860) and of the womb (1861), among other ablations. This magnificent, sentimental monument was erected by popular demand to honour Federico Rubio three years after his death. It was made by the Catalan sculptor Miguel Blay Fábrega (Olot, 1818 - Madrid, 1936). It was inaugurated on 13 December 1905 at three o'clock in the afternoon by King Alphonse XIII and Queen Victoria Eugenie, at an event attended by the students from the San Ildefonso school. Photograph by the author.

the specialisation of medical practice in Spain and the creation of the country's first nursing schools, in addition to being an innovative surgeon. Some of his students were outstanding pioneers in otorhinolaryngology, gynaecology, and the transition from electrotherapy towards neurology, as was the case of Serafin Buisen. It is not easy to find the monument to Federico Rubio in Madrid's Parque del Oeste, hidden among dense vegetation in a discreet hollow, looking towards the Institute that he built with such dedication. After its brutal destruction during the war, the monument was restored (Figure 8).

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Conflicts of interest

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