Paul Richer (1849–1933)

Olivier Walusinski, International Society for the History of the Neurosciences

https://doi.org/10.1093/acrefore/9780190264086.013.554
Published online: 19 August 2025

Summary

Paul Richer (1849–1933) was a pupil of Jean-Martin Charcot (1825–1893) at a time when the latter was formalizing his clinical conception of hysteria. Richer's dissertation, defended in 1878, illustrated the different phases of the crisis, with over a hundred fine and precise sketches, as would have been done with a photographic cutout if one had existed at the time. Richer was head of the "Clinique des maladies du système nerveux" laboratory until 1903, when he became a professor at the French National School of Beaux-Arts. Together with Charcot, Richer helped to write and illustrate two books aimed at dediabolizing pictorial representations of hysteria and other diseases: *Les Démoniaques dans l'art* and *Les Difformes et les Malades dans l'Art*, books sought after by bibliophiles in the early 21st century. The result of more than 5 years' work, his *Artistic Anatomy*, which was published in French and English in 1890 and is useful and in print in the early 21st century, is a monumental work that provides artists with all the morphological elements they need to represent the human body, both at rest and under activity, with the scientific rigor to which Richer was particularly attached. After creating educational statuettes for Charcot and his successors, notably the famous "*Parkinsonienne*," Richer moved on to statuary workers and peasants in activity, not forgetting a few monuments in honor of physicians, such as that of Alfred Vulpian (1826–1887) in Paris and of Louis Pasteur (1822–1895) and Émile Roux (1853–1933) in Chartres. Richer also created some 50 medals honoring his famous medical contemporaries. Even though Richer remains known to physicians interested in the history of neurology and to a handful of students at the French National School of Beaux-Arts, it is unfortunate that the general public, contemporary artists, and art critics seem to have forgotten him.

Keywords: Paul Richer, Jean-Martin Charcot, La Salpêtrière, French National School of Beaux-Arts, hysteria, statuary, medallist

Subjects: Cognitive Neuroscience

The year the third World's Fair was held in Paris in 1878 was also an important year for two physicians. Paul Richer (1849–1933), a resident at the time, was working under Jean-Martin Charcot (1825–1893) at the women's nursing home and asylum at La Salpêtrière Hospital. The relationship between Charcot, the founder of the French Neurological School, and this brilliant young physician, who was also an artist, led to a 15-year collaboration. Richer's career and oeuvre were exceptional in every sense of the word. His career path was unique: he studied medicine following France's 1871 defeat in the Franco–Prussian War; became a neurologist at the Mecca of neurological studies, La Salpêtrière; then furthered its influence by illustrating it as no one else could have done; finally, he became a professor at the French National School of Beaux-Arts. He was richly deserving of the many honors bestowed on him. Who else could have achieved membership in the French Academy of Medicine and then be elected to the French Academy of Beaux-Arts?

Paul Richer (Figure 1) was born on January 17, 1849 in Chartres (90 km southwest of Paris) into a family of wealthy merchants, the second of six children. In 1868, he passed his “baccalauréat” secondary school examination after being educated at several religious boarding schools where his drawing talents were noticed early on (Walusinski, 2023).

Figure 1. The only known photograph of Paul Richer drawing, around 1900.

Source: Richer’s family collection.

Coming to the Aid of Wounded Soldiers

The Franco–Prussian war broke out in 1870, when Richer was completing his first year of medical school. He served as a volunteer worker for an ambulance service based in Chartres that transported and treated the numerous wounded soldiers in the Loigny and Patay battles (north-central France). He assisted surgeon Georges-Sainfort Dujardin-Beaumetz (1833–1895) in amputating limbs . There was no treatment for thoracic and abdominal wounds.

Despite this arduous and psychologically exhausting work—Richer was only 21 years old—he found the time to draw some 50 magnificent pencil sketches, an unflinching testament to the carnage, during which temperatures dropped to -15°C. These drawings are held by his descendants. Based on some of these sketches for a well-known patient who underwent surgery, General Louis-Gaston de Sonis (1825–1887), an engraving was printed and later sold as a postcard to benefit the wounded (Figure 2). After the war, Dujardin-Beaumetz wrote a treatise on war surgery and called on Richer to create a number of engraved illustrations. This provided him with several months’ work, which he

carried out along with his studies. But the general, one of whose legs had been amputated, was nonetheless called to serve in Algeria; the book was never completed. This was the first disappointment Richer had to face. There is no trace of these commissioned illustrations, which are probably irretrievably lost.

Figure 2. Drawing made during the battle of Loigny on December 5, 1870.

Source: Richer's family collection.

Medical Studies

Although Richer ranked 64th in the "externes" examination (for students not yet residing in the Paris hospitals) in December 1871, he came in third in the resident examination on his first try in December 1874. He was in the same cohort as Jules Dejerine (1849–1917), the future third successor to Charcot at the head of the Clinic of Nervous System Diseases at La Salpêtrière Hospital. For the first 3 years of his residency, he worked under renowned surgeons, all of whom paid him such compliments as "very good resident, excellent service." (Archives AP-HP 774 FOSS/248/10. Service des archives de l'Assistance publique-Hôpitaux de Paris, Hôpital de Bicêtre.)

In 1878, Richer completed his fourth and final year of residency at La Salpêtrière under Charcot, whose influence changed the course of his initial career path, surgery, to an incipient speciality: neurology. Charcot praised him: “very zealous and especially learned” (Walusinski, 2023).

Decisive Meeting with Charcot

One day, when Richer was an “externe,” he attended one of Charcot’s lessons at La Salpêtrière which covered hand deformations due to rheumatic and neurological diseases. As Charcot described it:

> There exists a medicolegal hand but no medical hand; this is quite an interesting subject that I leave you to ponder, but to thoroughly do it justice, one would need not only medical knowledge but also a little artistic talent.
>
> (Richer, 1933)

Immediately upon hearing this suggestion, Richer hurried to his friend Henri Meillet (1846–1914), who was looking for a thesis subject. He offered to illustrate the text. Then when Charcot presided over Meillet’s thesis jury on March 9, 1874 and complimented the illustrator, Richer rose to identify himself in the audience. The Master invited him to do his fourth year of residency at La Salpêtrière. Charcot was thinking of the theatrical spectacle of fits of agitation among the young female patients with hysteria hospitalized in his department. Because of the slow shutter speed, the photographic technique at the time did not allow this agitation to be captured. Only drawings could render the brief, multiple attitudes of Charcot’s young patients. In this way, Meillet had an unintentional but decisive influence on the career of Richer, who, noticed by Charcot, devoted his many talents to serve the Master until his death.

Personal Creations During Richer’s Residency Under Charcot

During his residency, Richer was called upon by surgeon Marc Daniel Sée (1827–1912), at that time head of the anatomical department at the medical school, to illustrate his new book. Sée owed his notoriety to his translation of the histological treatise of the German Albert von Kölliker (1817–1905) in 1856. He also oversaw the revised and enhanced edition of the treatise of descriptive anatomy of Jean Cruveilhier (1791–1874) in 1862. Based on his research on the functional anatomy of the heart, released in 1875, he published a precise interpretation of the workings of valves and their chordae tendineae during a cardiac cycle (Sée, 1875). Four plates produced by Richer illustrate this anatomical content with a drawing technique remarkable for its accuracy and extreme finesse. But Richer’s name, that of the artist, appeared only on these plates in tiny characters, at the bottom left, and was absent from the title page and cover of the book, reprinted in 1883. Richer harbored profound bitterness about this his entire life.

That same year, Richer, undoubtedly remembering the wounded from the war, illustrated the thesis of one of his friends, François Germain (1843–?), on frostbite (Germain, 1879). Germain wrote,

> To palliate the insufficiency of the descriptions and show what they cannot communicate, we will insert in the text two plates depicting the main lesions of the lower limbs. We owe these plates to the kindness and skill of M. P. Richer, a resident in the department.

The surgeon Émile Tédenat (1851–1943) used these same drawings by Richer to illustrate his "agrégation" thesis (paving the way to becoming a university professor) in 1876 (Tédenat, 1880).

Doctoral Thesis

Charcot put forth his conception of hysteria major in four phases shortly before Richer became his resident in 1878. Richer devoted himself to drawing these phases, producing several hundred sketches, held in the early 21st century by the French National School of Beaux-Arts. Richer defended his own thesis with its drawings and illustrations on March 18, 1879, and Charcot presided. It was published in 1881, then in 1885, in highly enriched commercial editions, with additional texts and illustrations, establishing the work's lasting reputation (Figures 3–5). Here is what Richer had to say in his autobiography:

> The Master assigned me my work. Then I continued with studies of hysteria major that he had recently mapped out with Bourneville [Désiré-Magloire Bourneville (1840–1909)]. I thus spent my time at the bedside of hysterics, observing them when an attack of any kind occurred. Everyone in the department knew to come and find me when an attack began, whether night or day. Equipped with a quire [twenty-five sheets of paper], I covered them with drawings as quickly as possible to subsequently reconstruct the various succeeding phases. At that time, instantaneous photography did not exist, to say nothing of cinematography. For the Sunday lectures which attracted a large audience, I produced large charcoals in which the various phases of the major attack were represented. These drawings, which served to make etchings, illustrated my doctoral thesis, in which I also incorporated many one-line drawings that represented the highly variable attitudes of hysteria major. My thesis caused a sensation in the medical world, especially among my generation, due to its etchings and figures. Much later, the work once again generated interest, when I was doing my rounds for my candidacy for the French Academy of Medicine.
>
> (Richer, 1933)

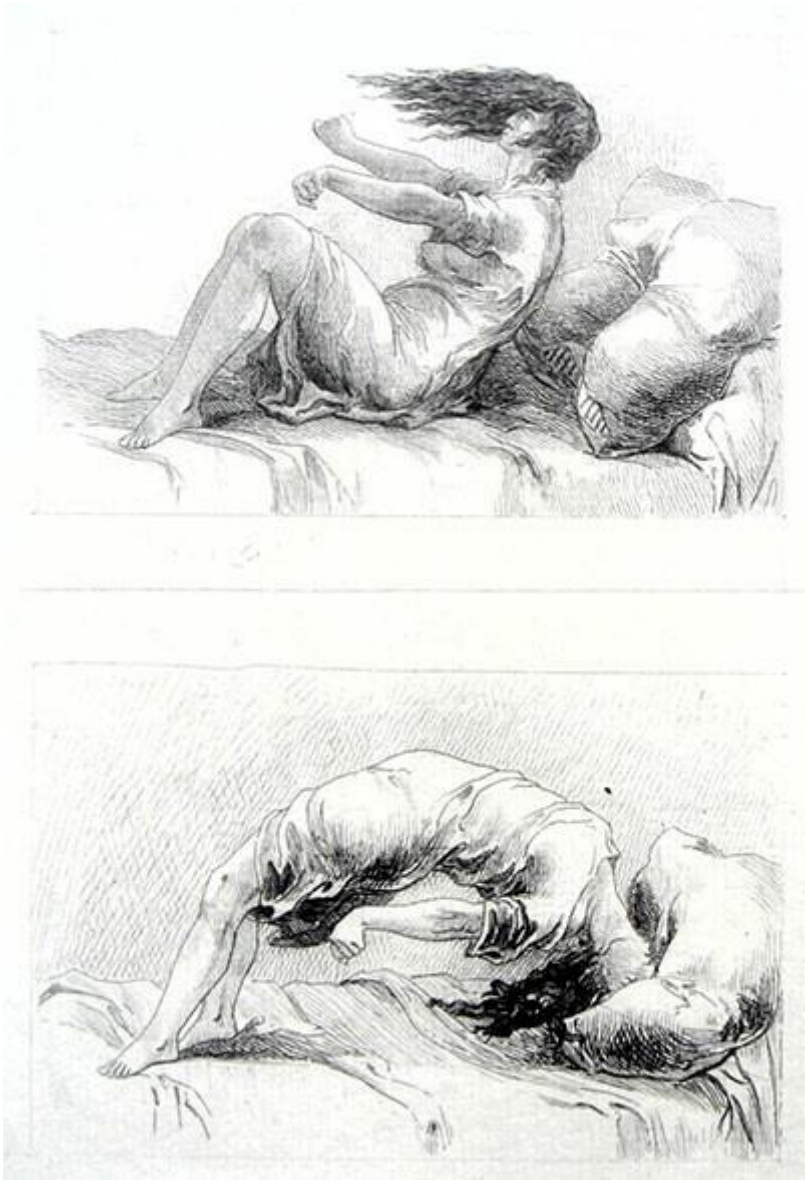

Figure 3. Original drawing of hysteria attack.

Source: Richer's family collection.

Figure 4. Original drawing of hallucination.

Source: Richer's family collection.

Figure 5. Original drawing of vomiting.

Source: Richer's family collection.

Hysteria Again and Again

Richer was honored in 1883 with the Bernard de Civrieux Prize awarded by the French Academy of Medicine for his dissertation *Paralysies et contractures hystériques* (hysterical paralysis and contraction), in the same vein as his thesis. Nine years later, in 1892, Richer published this work in a revised form, a book with 32 figures that already illustrated his book on hysteria in 1881 (Richer, 1892). A number of contractions described in this book are no longer considered as hysterical but rather as dystonia, involving dysfunctional basal ganglia and producing blepharospasm, spasmodic torticollis, oromandibular dystonia, and writer's cramp, all treated in the early 21st century by iterative injections of botulinum toxin.

Richer then illustrated several articles and studies devoted to hysteria. For example, are his drawing of astasia-abasia for another of Charcot's residents, Paul Blocq, in 1888 (Blocq, 1888) and his drawings of a Belgian patient with stigmata, Louis Lateau, for Bourneville's book published in 1878 in his collection: "Bibliothèque diabolique" (diabolical library) (1882–1902) (Bourneville, 1878). Finally, in 1889, Richer and Georges Gilles de la Tourette (1857–1904) authored the "hypnotism" entry in the *Dictionnaire des Sciences médicales* (Richer & Gilles de la Tourette, 1889).

Two works bear witness to Richer's close collaboration with Charcot: *Les Démoniaques dans l'Art* (demoniacs in art), in 1887 (Charcot & Richer, 1887), and *Les Difformes et les Malades dans l'Art* (the deformed and the sick in art) (Charcot & Richer, 1889), in 1889; they were compilations of masterpieces of occidental art since antiquity. Charcot and Richer often visited the museums of Europe together to observe these works. They chose illustrations of hysteria, demystified and freed from their diabolical aura; other illustrations could also reveal neurological diseases. In this second half of the 19th century, sorcery, haunted houses, apparitions of the Virgin, and multiple and varied superstitions occupied the mind of a broad public, regularly fanned by a press hungry for the sensational to increase their print runs. The era was also preoccupied by the relationship between science and faith, mind and body. Charcot, through his works devoted to nervous pathology and to hysteria in particular, was inevitably confronted with religious questions. He and many of his students, notably Bourneville and Gilles de la Tourette, attempted, in parallel to their projects, to secularize hospitals and reverse the propensity toward the supernatural, at that time in vogue. Established clinical facts had to demonstrate the absence of divine intervention to explain anesthesia, paralysis, and spectacular cures. The enterprise of Charcot and Richer used pictorial and statuary art in place of ancient manuscripts and texts to attempt the same demonstration, a retrospective semiology of sorts, a form of labeling applied to art by science. In proposing a book mixing art history and scientific arguments, they wanted to "show the role that exterior accidents of hysterical neurosis had played in Art, where they were considered not as a disease, but as a perversion of the soul by the presence of the devil and his actions" (Charcot & Richer, 1887). Through examples found in museums, they used their rationalism to indict "obscure village beliefs"

where “the supernatural interpretation, which contemporaries could not but give these highly extraordinary phenomena, disappeared as scientific investigations extended their researches and as modern science pushed backed the limits of its conquests” (Lalouette, 2002).

Head of the Laboratory and *Anatomie artistique*

Heeding Charcot’s advice, Richer elected not to pursue examinations for hospital and university positions. The Master then appointed him as head of the laboratory of the Clinic of Nervous System Diseases when it was created in 1882. Richer would remain in this position until 1902. The management of the hospital agreed to add an annex to his laboratory, where he produced not only plates and drawings of cases observed in the department but also pedagogical casts and statues. Richer collaborated with photographer Albert Londe (1858–1917) and with physiologist Étienne-Jules Marey (1830–1904).

It was in this laboratory that Richer composed his *Anatomie artistique*, a monumental work that is useful and in print in the early 21st century (Figure 6). The first edition was published in 1890, after 5 years of thoughtful gestation (Richer, 1890). He wrote, “After my works on hysteria and hypnotism, I devoted myself to my studies of human morphology. Charcot strongly encouraged me in this, repeating that ‘standard nude forms are even more necessary for physicians than for artists.’” And later on, “I could at last carry out the project I had wanted to realise for many years, namely to work for artists by creating a treatise on artistic anatomy, which began in 1885.” This large-format work (37 × 28 cm) is composed of 270 pages of text and 110 atlas plates, all of them in a “portfolio with cardboard binding, red canvas half cover, with red tie straps.” Charcot already referred to it in his lesson on October 30, 1888:

> Soon, I hope, we will be in possession of a large-scale work comprising admirable plates, created from life, where you will find this part of our science with all its details. We owe this work to Dr. Richer, my laboratory director and my collaborator many times over. This monument will depict art and science, for the benefit of all, working hand in hand and assisting each other.
>
> (Charcot, 1889b)

For Richer, art became a vehicle for expanding medical knowledge. He wished to offer his readers, who were artists, scientific rigor to reproduce the human body with as much veracity as possible.

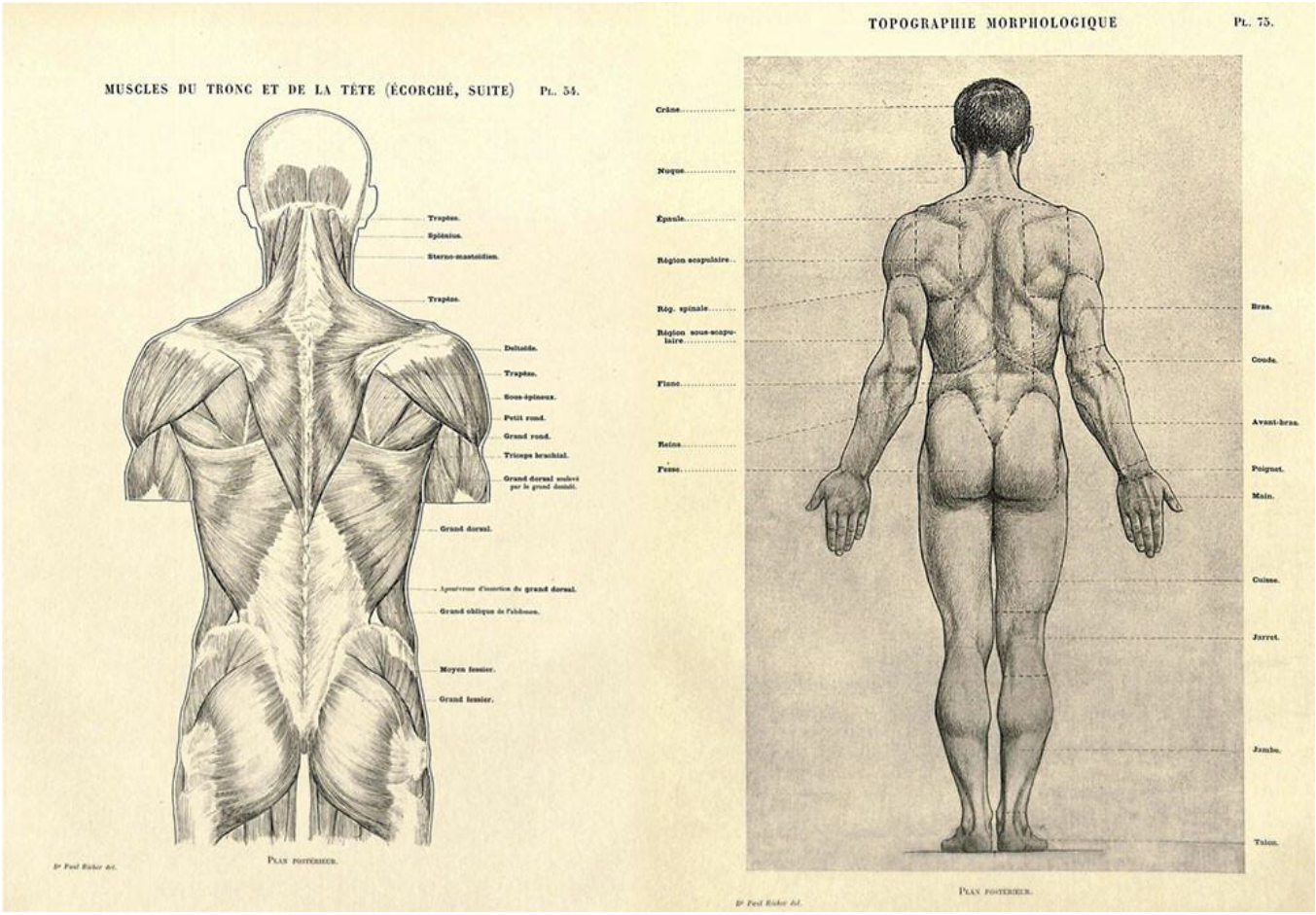

Figure 6. An example of an artistic anatomy plates.

Source: Collection by the author.

Richer drew all of the plates for the "Morphology" section based on photographs he himself had taken of two male models, "one of them used for the limbs, the other for the torso." For him, photography was a literal transcription of reality. But the graphic illustration he extracted from it, which he magnified, was the only vehicle of meaning and information By designing his own photographic mise-en-scène according to the graphic elements he intended to use, Paul Richer undertook an original approach that was truly personal to him, and innovative for his time. Some plates were covered with a copy on which the anatomical terms of the structures on the underlying plate were imprinted. Another characteristic approach was Richer's representation of his models in multiple positions—standing, bent over, leaning, crouched—to highlight the muscular projections specific to each position. This artistic anatomy did not focus on individual particularities; rather, it adhered to the "canon of proportions."

In the same vein, Richer developed in 1893 "a canon of proportions of the human body" (Richer, 1893). His normative and technical approach, which he, like a surveyor, called "morphological topography," reflected the desire of scientists to impose formal rules on artists. Referring to his stallion statuette, he candidly declared, "In this slim volume, and in the statue accompanying it, my aim was to offer artists the most solid and most recent acquisitions of science regarding human

proportions." Undoubtedly aware of this work's limits, Richer undertook, after leaving La Salpêtrière, to supplement the available data by focusing on the differences between the subjects: the variations related to gender and, for a given subject, the changes in form and proportion according to whether the subject was young or old, at rest or in action, healthy or sick.

Six large volumes, gifted to his successor Henry Meige (1866–1940) when he left the French National School of Beaux-Arts, bring together more than 400 photographs of male and female models and thousands of measurements carefully recorded and classified for more than 20 years. This normative collation, which could be considered obsessional, was the basis for establishing his canons of proportions of the human body. Richer's pioneering originality is to have represented feminine as well as masculine canons, highlighting the different distribution of subcutaneous fat in women and how fat can blur the muscular contours visible in men. But relative to canons, one should highlight his minimization of "eugenic anatomy," a dominant way of thinking at the time that was based on the initial studies of the French Society of Anthropology. This form of aesthetic racism preceded scientific racism, which led to many deviations in the 20th century.

Artistic Physiology

In 1895, after his *Anatomie artistique*, Richer published *Physiologie artistique de l'homme en mouvement* (artistic physiology of man in motion), the first of his works that Charcot would not be there to read. He did not fail to note, "With my friend Albert Londe, the highly skilled head of photography at La Salpêtrière, I made numerous chronophotographs not only of various modes of locomotion, but of all sorts of movements as well" (Richer, 1895–2). They produced more than 400 chronophotographs, a means of globally studying movements, such as locomotion or occupational movements (Figure 7).

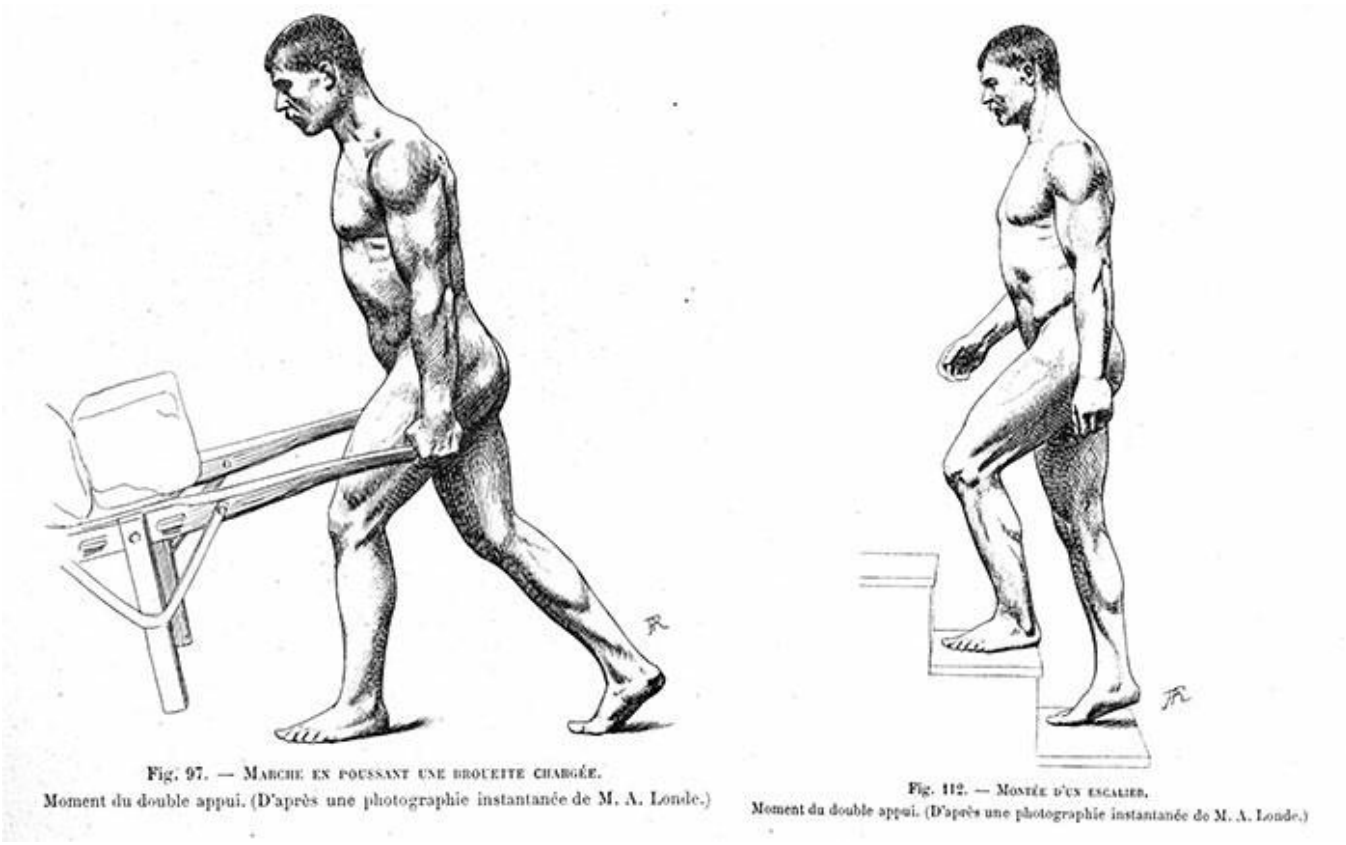

Fig. 97. — Marche en poussant une brouette chargée.
Moment du double appui. (D'après une photographie instantanée de M. A. Londe.)

Fig. 112. — Montée d'un escalier.
Moment du double appui. (D'après une photographie instantanée de M. A. Londe.)

Figure 7. An example of an artistic physiology plates.

Source: Collection by the author.

Richer devoted the first chapter of his *Physiologie artistique* to a long argument on the relationship between art and science, supported by a plethora of citations. In 1897, he returned to this theme in the form of an imaginary dialogue between two protagonists, Callias and Pamphile, personifications of Art and Science based on their Greek names, for the readers of *La Nouvelle Revue* (Richer, 1897). He tirelessly argued that "between anatomy and the nude, the distance equals that between a corpse and a living body." Turning to physiology after anatomy, he identified the same goal, "that this work is, overall, only the continuation of its predecessor." Technical progress assisted the eye to capture the movement that chronophotography was able to break down. Initially used to explore galloping in horses, "the study of human movement by the same method [had] never been undertaken before the work of M. Marey." Richer highlighted the physical determinants from which the mechanics of movement arose, demonstrating the lever effects generated by the muscles on the bones as fixed points, without overlooking the determinant role of the center of gravity. He focused on the study of muscles, notably their shape at rest and when contracted, and the play of antagonists. After having studied, one after the other, the main muscles of the limbs and torso, Richer focused on the upward position, on one foot, on both knees, sitting, and crouched. It is curious to find "the representation of the corpse" in a work of physiology. However, Richer did not omit a brief discussion of the changes that the body undergoes during the first 48 hours after death, but he did not include any drawings.

The diagrams breaking down the steps during walking are certainly the most original and innovative aspects of this book. They do not fail to describe, with great accuracy, walking backward, walking while carrying a load on one's shoulder, walking while pushing or pulling a load, climbing a staircase or an incline, and running. In each of these circumstances, the changes in the appearance of the various muscles are meticulously explained and accompanied by drawings or diagrams. The full extent of Richer's talent as an illustrator, but also as a teacher, is showcased. He leveraged all this knowledge for his own productions, namely his statuettes of sportsmen, at the peak of their efforts to represent muscular activity with the rigor of scientific anatomy, for the World's Fair in Paris in 1900 and his bronze statuettes or high-relief sculptures in plaster of peasants and artisans at work (Figure 8).

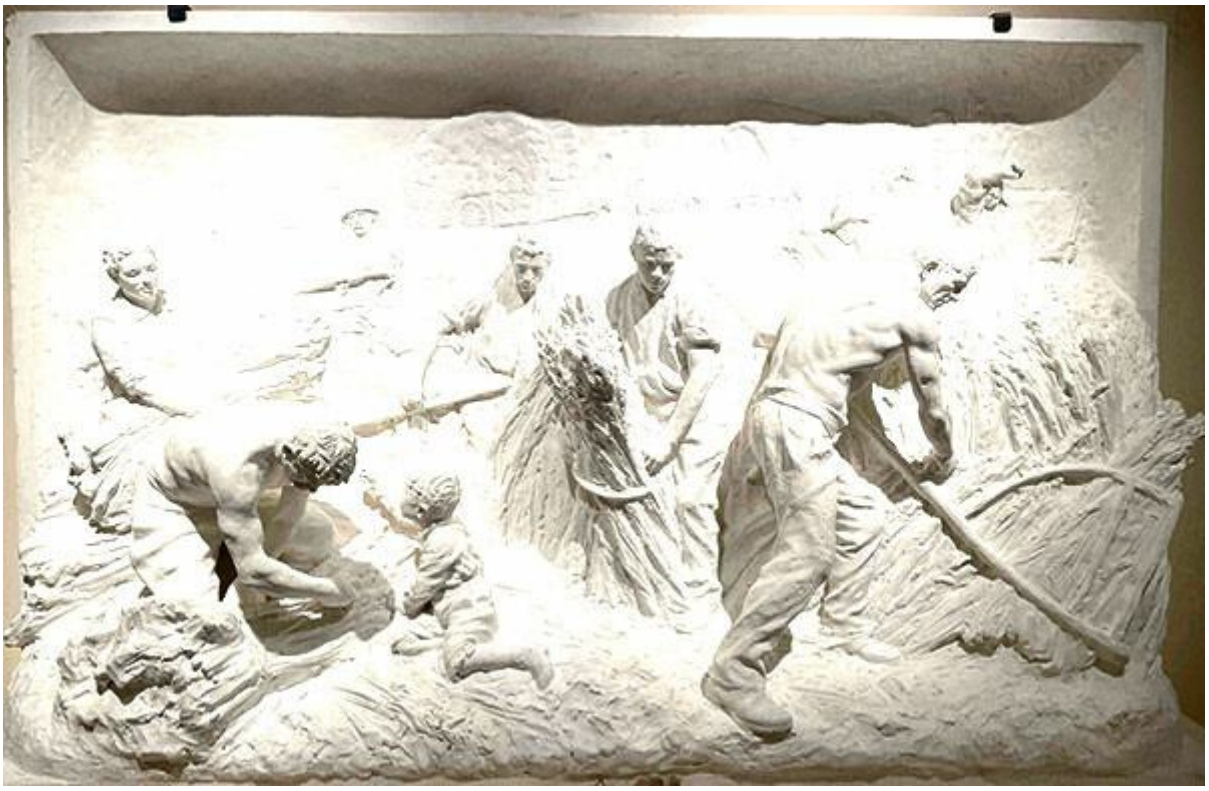

Figure 8. The harvest, high relief.

Source: Courtesy of Musée des Beaux-Arts de Chartres.

Medical Statuary for Teaching Purposes

To help Charcot in his teaching, Richer developed pedagogical material, such as statuettes, the most well known of which is the "Parkinsonienne," depicting with exceptional realism a female patient with Parkinson's disease (Figure 9). Completed in 1895, after the unexpected death of Charcot in 1893, these statues were useful for his successor Fulgence Raymond (1844–1910). The model was Gell , a 58-year-old day laborer admitted on July 12, 1892 to La Salpêtrière. Two years after an emotional shock, her right hand began to shake at rest, then it was her entire right upper limb, and

finally her lower right limb; the movement thus affected the entire right side of her body. Diffuse pain, of increasing intensity, also developed, reducing her movements even more. Richer and Meige provided all the details of this observation in *La Nouvelle Iconographie de La Salpêtrière* in 1895 (Richer & Meige, 1895). For Richer, "the nude drawings of these patients are highly interesting to study . . . notably the special imprint with which the given nervous disease marks the entire body" (Richer, 1895–1), such as the characteristic frozen position with elbows close to the body. He rendered with stupefying accuracy the "general emaciation and cutaneous folds"; the skin is so fine that the entire network of subcutaneous veins is distinctly apparent. Hypogastric eventration secondary to 11 pregnancies carried to term by the patient was clearly apparent. Richer drew the simultaneous contraction of all muscles down to the smallest bundle:

> The forearm and the long supinator form a characteristic projection. To obtain this simple degree of flection of the elbow, we never see in the normal state the long supinator contract. The cord that it forms here rises almost to the importance of a pathognomonic sign.
>
> (Richer & Meige, 1895, p. 37)

Richer sought to make each muscle in its function and its hypertonic state its own "blatant truth." He concluded his long discussion as follows:

> The morphological examination we have just conducted seems to confirm the opinion first put forth by Vulpian and which attributes stiffness in Parkinson's disease to a slight degree of contraction. This can be compared to some recent trends whereby this stiffness is considered the consequence of a special myopathic condition.
>
> (Richer & Meige, 1895, p. 371)

Richer contested "via clay" the hypothesis of a muscular origin of the disease, defended by Eugène Béchet (1862–1939) in his thesis on atypical forms of Parkinson's disease (Béchet, 1892). All physical signs of the disease, underscored by the inexorable decrepitude of old age, are discerned with accuracy unequaled by any other pictorial representation.

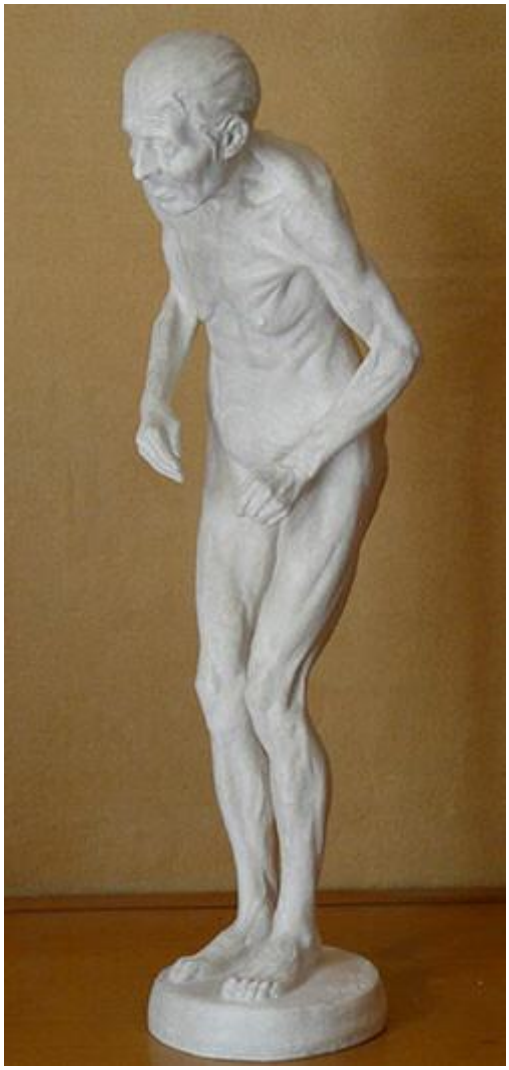

Figure 9. The “Parkinsonnienne,” 1895.

Source: Collection by the author.

In 1894, Richer created the bust of a patient with myopathy. He perfectly captured the physiognomy of these patients:

> The mouth is enlarged, the lips slightly open, almost always asymmetrical, seeming large and protruding. The lower lip in its entirety, or only one half of it, sometime seems to hang low, almost turned under, revealing part of the mucous. The forehead, with an ivory sheen, is remarkably smooth. The eyes are wide open, and there is partial occlusion of the eyelids during sleep, giving patients something like the physiognomy of exophthalmics.
>
> (Landouzy, 1886)

In 1860, Guillaume Duchenne de Boulogne (1806–1875) published the first series of 13 cases of patients with the same symptoms: “progressive muscular paralysis of the tongue, the soft palate, and the lips” (Duchenne, 1860). In his book *De l’électrisation localisée et de son application à la*

pathologie et à la thérapeutique (localized electrification and its application to pathology and therapy), he renamed this entity for which he was the first to list and characterize the clinical symptoms: “labio-glosso-laryngeal paralysis”; he added disturbances of phonation and paralysis in the respiratory muscles to his initial description, noting that the prognosis was invariably fatal in less than 3 years. Most frequently, this pathology is the bulbar form of amyotrophic lateral sclerosis for which Charcot gave the complete clinical picture in one of his lessons in 1868, published a year later (Charcot & Joffroy, 1869). In 1870, Charcot confirmed that the spinal and bulbar forms of amyotrophic lateral sclerosis were the same disease (Charcot, 1870), known as the eponymous “Charcot disease,” whereas the anatomopathological lesion was described, in the same volume of *Archives de physiologie*, by Duchenne and Alix Joffroy (1844–1908) (Duchenne & Joffroy, 1870). Charcot entrusted Richer with the task of illustrating this pathology, so Richer sculpted a statue:

> The patient is shown holding her handkerchief to wipe away the saliva that constantly flows from her half-open mouth. A bib is fastened around her neck to protect her clothing . . . Her mouth gapes and her paralysed tongue looks soft and shrunken in the buccal opening. From the most inclined commissural angle flows an endless thread of saliva. By contrast, the upper part of the physiognomy maintains its expression.
>
> (Richer, 1896; Figure 10)

He did not comment on the emaciation of the face, which he nevertheless perfectly rendered. By choosing this position of the semiflexed forearm, the patient holding a cloth to her mouth, Richer showed the atrophy of the interosseous muscles, notably the first space, another cardinal sign of the disease. Richer’s description is also a compassionate portrayal of this major disruption whereby patients can no longer swallow their saliva and must wipe it away constantly. Only one sign is missing from the complete clinical picture, something a statue could never capture: the fasciculations in the slowly atrophying muscles.

Figure 10. Bulbar amyotrophic lateral sclerosis.

Source: Courtesy of Musée AP-HP.

In 1898, Meige presented a new sculpture by Richer, describing it as a "work of scientific art" (Meige, 1898). It depicted thyrogenic infantilism (thyroid nanism). In one of his lessons, Raymond presented the case of a 19-year-old man whose physical and intellectual development stopped at the age of around four. He was 1 m tall and weighed 23 kg:

> His face, with its thickened integuments and empty traits, seeming to drown in the generalised bloatedness, did not show any sign of intelligence. His nose was flattened, his lips thickened, and his eyelids puffy; his forehead was very low and his skull elongated from front to back; there was maxillary prognathism.
>
> (Raymond, 1900; Figure 11)

This case of congenital hypothyroidism or congenital myxedema is one of the first to have been treated by Bourneville with fresh thyroid extracts from pigs. Richer used this case as a model for a pedagogical statue. It featured genu valgum in the right leg and left clubfoot, accentuating the statue's pathological appearance which was a third the patient's size.

Figure 11. Nanism (Dwarfism) due to congenital hypothyroidism.

Source: Courtesy of Musée de la médecine et de la pharmacie de Lyon.

Medical Illustrations: Suspension for Treating Tabes Pain—1889

The clinical picture of progressive locomotor ataxia (tabes) was described in France by Guillaume Duchenne de Boulogne (1806–1875) in 1858 (Duchenne, 1858). The infectious syphilitic origin of this disease of the spinal cord was linked to syphilis in 1875 by Alfred Fournier (1832–1914) but was not truly accepted before the end of the 19th century. German authors also preceded the French studies. For example, Christopher von Weidenbach (1817) used the word "tabes"—meaning "to disintegrate" in Latin and a synonym of "phthisis" in Greek—to describe the macroscopic

appearance of the spinal cord. Moritz Heinrich Romberg (1795–1873) described the complete clinical picture from 1840 to 1846, using the term tabes dorsalis. He added the famous eponymous sign to the semiology of ataxia, seeing no other cause for it than tabes. At that time, morphine was the only treatment for this horribly painful disease.

But in 1889, new hope for a treatment emerged. Charcot dedicated his January 15, 1889 lesson to the treatment of ataxia using the "suspension technique of Dr. Motchutkowsky of Odessa" (Charcot, 1889a). Charcot's former resident Fulgence Raymond had made a trip to Odessa, accompanied by their Polish student Jakow Naumowicz Onanoff (1859–1892), who served as interpreter. Raymond brought back an article that Charcot was unfamiliar with. It had been published in 1883 in Russian in the journal *Vratsch* (Motchutkowsky, 1883) ("physician") and was translated into English for the journal *Brain* in 1889 (Motchutkowsky, 1889). The author, Osip Osipovich Motchutkowsky (or Motchutkovsky, 1845–1903), explained that a patient, fitted with a corset named for Lewis Sayre (1820–1900) and worn to correct scoliosis (Sayre, 1877), claimed that the pain and motor difficulties associated with his locomotor ataxia had all but disappeared. Charcot was aware of his therapeutic impotence but was impressed by the article of the Odessan neurologist; in October 1888, he thus assigned his then senior resident, Georges Gilles de la Tourette (1857-1904), with the task of experimenting with this new therapy:

> I do not believe the new method will radically change the state of things, but if it proves more effective than most of the means currently at our disposal, and is as innocuous in its application as the best of them, then it will no doubt be eagerly accepted.

The first patients to undergo this treatment seemed to obtain some relief from their terrible pain. Richer illustrated the articles of Charcot and Gilles de la Tourette, first representing Sayre's chin-hold apparatus and then showing in two other drawings its fitting device and a suspended patient (Gilles de la Tourette, 1889). The press rapidly reported on Charcot's initially favorable opinion. For example, on March 23, 1889, the newspaper *Illustration* devoted a full page to the apparatus, illustrated by Richer's drawings (Figure 12). Dispensaries that adopted it proliferated, without medical supervision or any diagnosis or treatment. Richer's drawings were reproduced in various medical journals, especially when the author was Gilles de la Tourette. After several serious accidents, some of them fatal, this attempted mechanical treatment of tabes was abandoned at the beginning of the 20th century. Curiously, Richer made no comments in any document on the illustrations he made of these therapeutic tests.

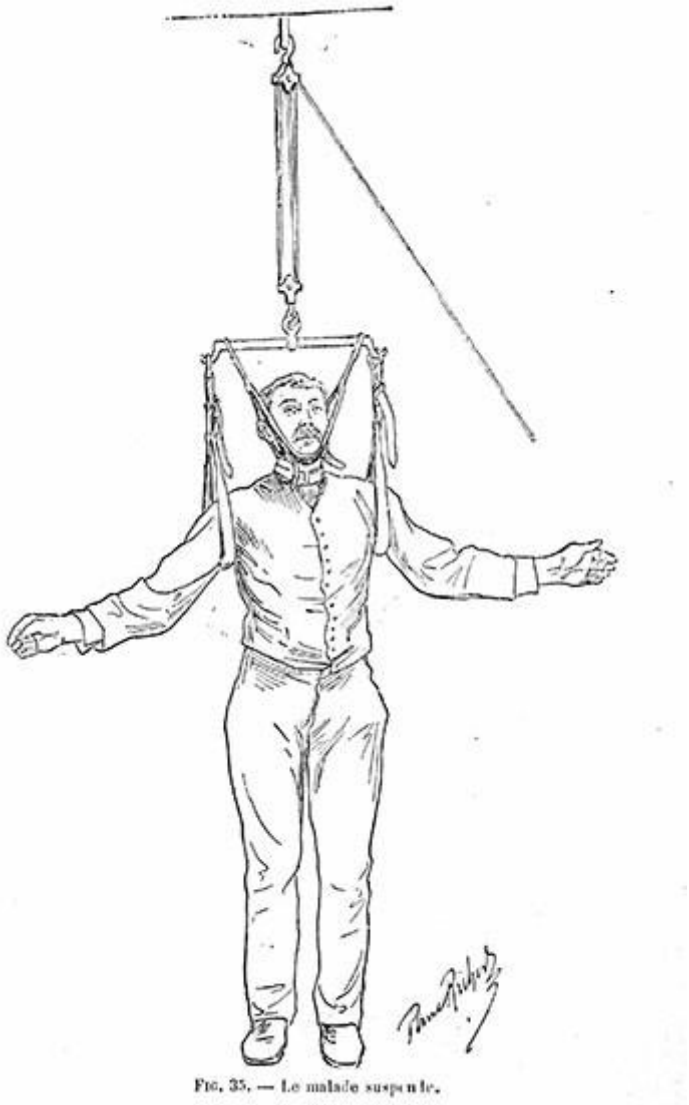

Figure 12. Medical illustrations: Suspension for treating tabes pain in 1889.

Source: Collection by the author.

Medical Illustrations: Syringomylia—1889

Charcot's Tuesday Lesson on June 28, 1889 was illustrated with one of Richer's drawings (Figure 13). The 48-year-old patient, Marie F., clearly showed atrophy in the muscles of both her arms: "Her hand shows forced extension, resembling the hand of a preacher, as described by M. Joffroy and by me, with regard to thyrotrophic cervical pachymeningitis" (Charcot, 1889b). This woman had the disease described by Augustin Morvan (1819–1897), a country physician working in Brittany who, from 1883 to 1889, sent five successive articles to the French Academy of Medicine which were published in *La Gazette Hebdomadaire de Médecine et de Chirurgie* (Morvan, 1883, 1886). He presented a novel clinical picture, which had escaped Charcot, of a disease characterized by the successive appearance of multiple panaris inflammations, resulting in necrosis of the phalanges and definitive deformation of the fingers. This was accompanied by muscular atrophy in the hands and upper

limbs as well as disturbances in tactile and temperature sensitivity. He added to his initial description by noting the progressive appearance of bone fragility, hyperhidrosis, subcutaneous hemorrhage, and bone/joint deformations. He also highlighted the progressive nature of the deficits (Walusinski, 2012). In 1882, Otto Kahler (1849–1893), in Prague (von Kahler, 1882), and Friedrich Schultze (1848–1934), in Dorpat (now Tartu in Estonia) (Schultze, 1882), published two observations with the same symptoms that they explained by the discovery during autopsy of an abnormal vertical medullary cavity. They called this pathology "syringomyelia," employing the term first used by Charles-Prosper Ollivier d'Angers (1796–1845) in 1827 (Walusinski, 2012).

Figure 13. Illustration of syringomylia.

Source: Collection by the author.

Richer later illustrated other pathologies: in 1890, a case of vertebral carcinomatosis (Guinon, 1890) and lumbar hypertrichosis (Féré, 1890); in 1892, hand deformations due to rheumatological and neurological pathologies (Charcot, 1892); in 1894, the morphological modifications in muscles of patients with myopathy (Richer, 1894; Richer & Meige, 1894); and in 1896, a seizure in a child (Laborde, 1896).

La Nouvelle Iconographie de La Salpêtrière

Bourneville founded the journal *Iconographie photographique de La Salpêtrière* in 1877, but its publication ended in 1879 after he left La Salpêtrière. Charcot called for its renewal in 1888 with the title *Nouvelle Iconographie de La Salpêtrière*; it would be published until 1918. It was headed by three editors in its early days: Richer, at that time the head of the laboratory; Gilles de la Tourette, at that time a senior resident; and Albert Londe (1858-1917), at that time in charge of the photographic department. This *Nouvelle Iconographie* aimed to complement the *Archives de Neurologie*.

The foreword, of the first installment, describes the preeminent role that Richer and Londe would play: "We do not need to call on outside help for the drawings, engravings, or photographs in the cases we present" (Richer et al., 1888). In the journal's early years, the articles of those working at La Salpêtrière were the most prevalent, followed by a broad national and international diversification after 1895. Although his name was listed as the director until the last issue was released in 1918, Richer did not publish any of his own work in the journal after 1899. His student and friend, Henry Meige, who became involved with the journal in 1893, replaced him as editor-in-chief and was then alone in publishing studies on medical representations in art starting in 1899.

It is possible here to provide only a few examples of Richer's articles. In 1888 and 1889, he offered readers several excerpts of the book *Les Difformes et les Malades dans l'art* (the deformed and sick in art). Pierre Marie (1853–1940), a resident under Charcot in 1882 and his senior resident in 1883 and 1884, wrote the seminal description of acromegaly in an article in the 1886 issue of *La Revue de Médecine* (Marie, 1886). He produced a longer, more detailed version focused on clinical and anatomopathological aspects in *La Nouvelle Iconographie de La Salpêtrière* in 1889. Londe contributed photos of patients while Richer made detailed drawings of the skull, clavicle, jaw, and humerus from an autopsied case. Gigantism, spectacular in the photographs, did not appear clearly in the drawing of a sectioned skull but was evident in the comparative drawings of the humerus of a healthy subject and that of a patient with acromegaly.

In 1890, Richer offered a preview of a few pages of his *Anatomie artistique* (artistic anatomy). To inform his readers of the aims of his work, Richer made illustrations of the external conformation of the body relating to the distribution of subcutaneous fat, which varied according to gender and age. This, in itself, was an innovative contribution.

In 1891, Richer illustrated an article by Achille Souques (1860–1944) and Jean-Baptiste Charcot (1867–1936), which reported the observation of a 21-year-old woman with a physically aged appearance (Figure 14). For this condition, they coined the term "geromorphism" from the Greek for "old age" and "appearance." The term is used by geologists, whereas, in medicine, "progeroid syndrome" is used. Souques seemed unaware at the time that the first form had been described by Jonathan Hutchinson (1828–1913) (Hutchinson, 1886) in 1886. The common term in the early 21st century is "progeria" (Gilford, 1897, 1904) or Hutchinson–Gilford syndrome (Hastings Gilford, 1861–1941). These types of progeroid syndromes are attributed to a mutation of the LMNA gene encoding lamins A/C, which are indispensable proteins for the structural support of the nucleus in the body's cells (Navarro et al., 2008). This pathology is called laminopathy, which affects four to eight newborns out of one million births.

Figure 14. Progeroid syndrome (Géromorphisme).

Source: Collection by the author.

In 1893, the only collaborative text between Charcot and Richer was published in *La Nouvelle Iconographie de La Salpêtrière*. It was also their last shared publication before the Master's death: "La danse macabre du Bar" (dance of death in Le Bar sur Loup). This fresco is a painting on wood preserved at the Saint-Jacques-le-Majeur church in Le Bar sur Loup (Alpes-Maritimes region). The panel measures 1.68 × 1.27 m, divided into two parts: the scene above with monorhymed Provençal verse below providing commentary. It dates from the 15th century.

> Usually dance of death images represent individuals from diverse walks of life: the pope, the emperor, the rich man, the serf and his yoke, the beautiful maiden, and so forth, all set in motion separately and all together by a skeleton representing death; the fact that we are all mortal is the morality of these various scenes . . . The painter of the church in Bar took matters a step further: he sought a higher morality and showed what happens to the soul after death, depending on the moment death takes it by surprise 'on the path of God or in the mire of sin.'"

In commentary describing the scene, Charcot and Richer schematized the representation of the soul by a cherub, above the heads of the characters, and of the philosophy expressed by these scenes of death, the same fate for all, which could occur at any moment.

The installments in later years reproduced many further works by Richer and Londe with Meige's assistance, dedicated to anatomical and functional representations of the male and female body, both at rest and engaged in various activities such as walking, running, carrying loads, and going up and down stairs. Many of Richer's illustrations appeared in a series of books—for example, *La nouvelle anatomie artistique* (the new artistic anatomy), *Le nu dans l'art* (nudes in art), and *La figure humaine* (the human figure)—published as textbooks for instruction when he was a professor at the French National School of Beaux-Arts.

Professor at the French National School of Beaux-Arts

Richer's talents and his immense productivity led in 1903 to his being named professor at the French National School of Beaux-Arts. He undertook to bring scientific knowledge to artists so they could perfect their representation of bodies by transforming "the anatomy of external forms" into a science of nudes which he christened as "morphology." For this purpose, he developed a reference model, a morphological standard, based on thousands of measurements collected from several hundred subjects of both genders. What one might call this titanic work was influenced by the idea of the average man developed by the mathematician Adolphe Quételet (1796–1874), the work of Alphonse Bertillon (1821–1883), father of the scientific police, and that of Paul Topinard (1830–1911), one of the founders of physical anthropology. With his *Canon des proportions du corps humain* (canon of proportions of the human body) and his *Traité d'anatomie artistique* (treatise on artistic anatomy), Richer seemed to advocate replacing the aesthetics of beauty with the illusion of a scientific notion of perfection. An entire series of books intended for his students and for artists is aimed at transmitting this accumulated knowledge on the representation of the human body. These publications remain sought after in the early 21st century, with new editions and translations in several languages.

Richer the Sculptor

Richer became a prolific sculptor after 1889. His *Premier artiste* (first artist) is exposed in the gardens of the Museum of Natural History in Paris. Another one pays homage to Alfred Vulpian (1826–1887; Figure 15). Another example is the monument in Chartres depicting the vaccination of sheep against anthrax. Some of his creations have been made into plates, bas-reliefs, and vases and feature mainly artisans (blacksmith, lumberjacks, diggers) and peasants (sowers, harvesters) at work (Figure 16).

Figure 15. Alfred Vulpian (1826–1887) statue, rue Antoine Dubois, Paris.

Source: Photograph courtesy of the author.

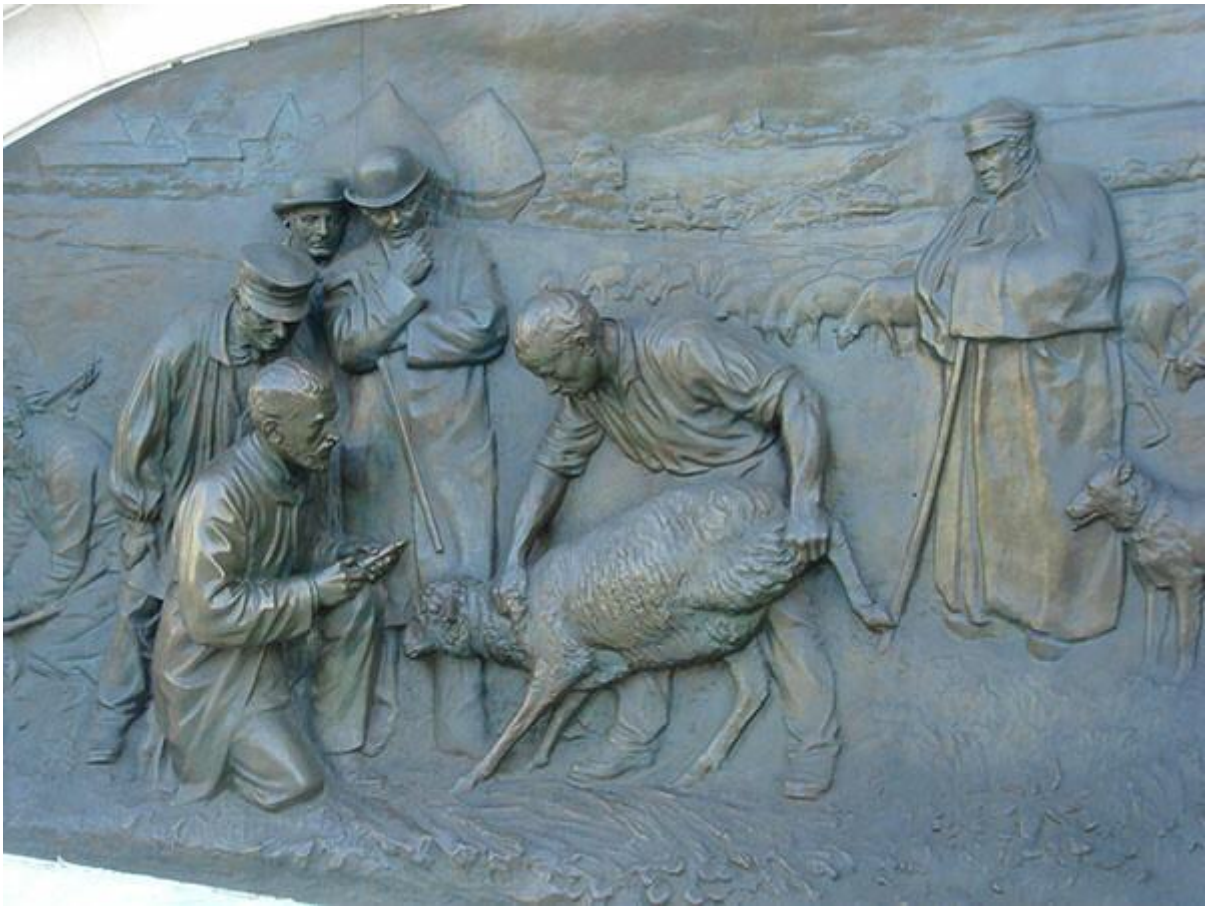

Figure 16. Monument celebrating the success of anthrax vaccination by E. Roux and L. Pasteur in Chartres.

Source: Photograph courtesy of the author.

In 1913, Richer presented a marble work, *Tres in Una*, at the Exhibition of French Artists. This was the wedding of all his passions: art history, morphology of the human body, and how this morphology could be rendered in the visual arts. This marble work was the crowning achievement of his career as Professor at the French National School of Beaux-Arts. Drawings based on antiquity were an obligatory step for the students at the school who had access to a unique collection of casts. Drawing inspiration from Greek sculptors, Richer fashioned a triptych that seemed to mimic *The Three Graces* and was the culmination of the "science" representing the outer forms of the body with the most perfect fidelity to movement. The figure on the left, the ideal of the Renaissance, is slightly bent, with a languid air. The middle figure expresses the harmony of classical Greek statuary. Finally, the figure on the right expresses the blossoming of the modern woman, her silhouette undulating.

The Museum of Beaux-Arts in his native city of Chartres holds the plaster that served as preparation for the ensemble *L'art et la Science devant Athena* (art and science before Athena), through which he illustrated his own career as a physician and artist under the vigilant eye of Athena: "Two radiant goddesses, Nature and Truth, art and science, translating by the contrast of their beauties the charm of life and the nobility of thought," wrote Richer in his autobiography (Richer, 1933; Figure 17).

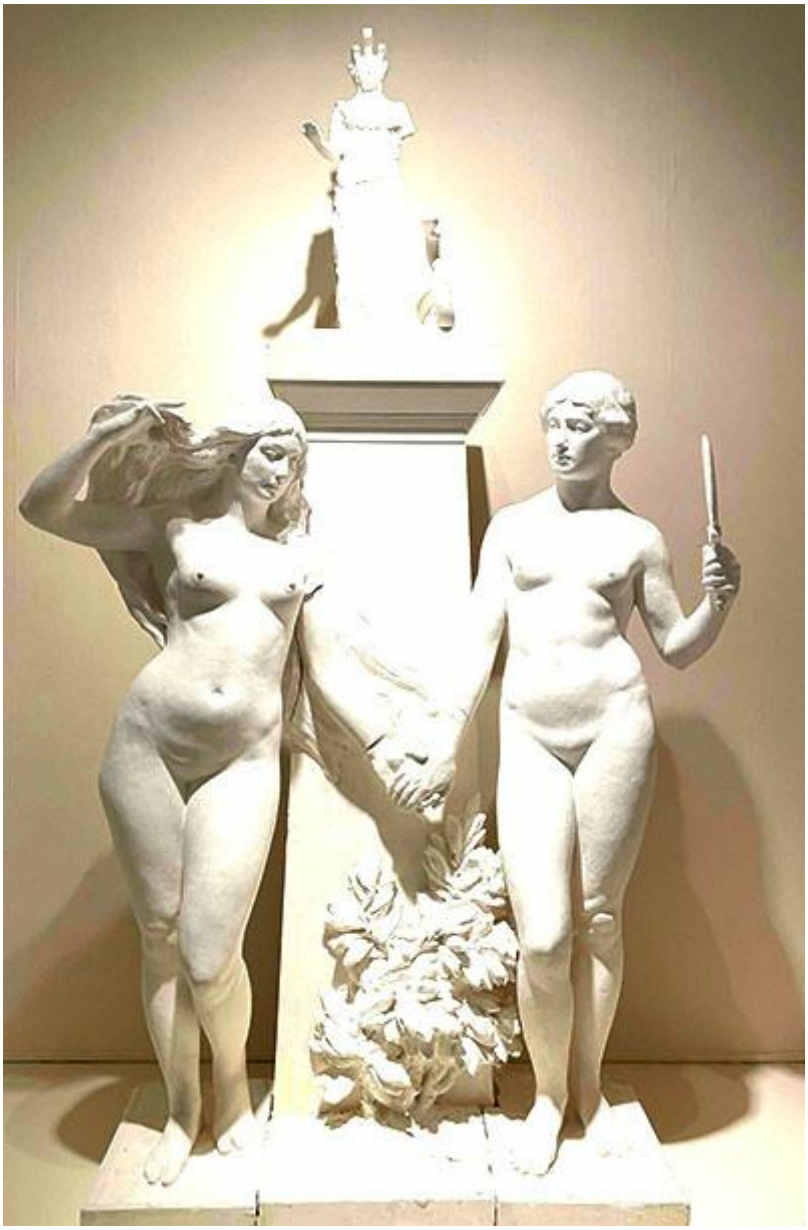

Figure 17. The muses of art and science before Athena.

Source: Courtesy of Musée des Beaux-Arts de Chartres.

In addition to statues celebrating some of the scientific glories of his era, those of Alfred Vulpian (1826–1887), Saturnin Arloing (1846–1911), and Victor Cornil (1837–1908), Richer decorated two other large works, including the fountain of the city of Lamalou-les-Bains, in southern France, where Charcot addressed the patients with tabes in the hope of attenuating their terrible pain. In Chartres, Richer celebrated the success of Émile Roux (1853–1933) and Louis Pasteur (1822–1895), who discovered a vaccination against the anthrax that was decimating sheep.

Richer the Medallist

There is no document indicating why and how Richer became a medallist. His first attempt dates from 1888 and this medallion represents his son Henri. Each of his children would have their own medallion. In keeping with this family tradition, Richer produced a medallion in 1904 to celebrate his 25 years of marriage. On April 21, 1879, he had married Marie Delacour (1860–1939). For this anniversary, Richer made his own portrait in profile. The two faces across from each other are perfectly lifelike, grave, and austere (Figure 18).

Figure 18. Paul Richer and his wife. Medallion in 1904 to celebrate his 25 years of marriage.

Source: Richer's family collection.

After 1890 and until his death, Richer created around 50 medallions in homage to his contemporaries, mainly physicians, but also institutions (centennial of the French Academy of Medicine, the French Society of Biology) and medical conferences. A few examples can be cited: Jean-Baptiste Charcot (1867–1936), son of the Master and a neurologist turned explorer of the poles, alienist Valentin Magnan (1835–1916) (Figure 19), and physiologist Étienne-Jules Marey (1830–1904).

Figure 19. Medallion of Valentin Magnan (1835–1916) in 1908.

Source: Collection by the author.

A Brief Career as a Neurologist

Richer's career as a neurologist was short-lived. He saw patients Charcot sent to him in his private office where he used electrotherapy for curative purposes, especially with paralysis, as was usual for a practician at that time. In 1899, he was one of the 17 founding members of the French Society of Neurology of Paris, a learned society that became the French Society of Neurology in 1949. He was elected as member of the French Society of Biology on July 8, 1893, becoming vice president in 1898. After his famous thesis, Richer was welcomed into the brand-new French Society of Physiological Psychology in 1885, the year of its creation, and into the French Society of Psychotherapy, Hypnology, and Psychology (1889–1924) in 1891.

Conclusion

Richer ended his career in 1922 as general inspector for instruction in drawing, an administrative position created for him. Once retired and until his death, Richer remained intensely productive in his creation of statues and medals. He died of pneumonia on December 17, 1933 at his Paris home.

Richer produced an immense, varied oeuvre and had a personal style immediately recognizable, due to the accuracy and finesse of his pencil stroke. He was dedicated to representing the human body with anatomical accuracy, in both drawings and sculptures, which could be considered

photographic. The absence of any painted works, which may be surprising, was a deliberate choice, since he knew he was color-blind. As a contemporary of the impressionistic movement, Richer published neither commentary nor studies on the subject. However, some objects of interior decoration that he created, such as vases and tableware, are clearly Art Nouveau in style, delicate and refined.

Even though Richer remains known to physicians interested in the history of neurology and a handful of students at the French National School of Beaux-Arts, it is unfortunate that the general public, contemporary artists, and art critics seem to have forgotten him.

Further Reading

Brbillon, C. (2004). *Les canons du corps humain au XIXe siècle, l'art et la règle*. Odile Jacob.

Comar, Ph. (1997). *Mémoires de mon crâne, René Des-Cartes*. Gallimard.

Comar, Ph. (2008). *Figures du corps, une leçn d'anatomie à l'École des Beaux-Arts*. Beau-Arts de Paris les éditions.

Hallé, G. (2023). *Paul Richer, artiste et médecin chartrain*. Musée des Beaux-Arts de Chartres-Snoeck.

References

Béchet, E. (1892). *Contribution à l'étude clinique des formes de la maladie de Parkinson* [Thèse Paris n°351, Louis Bataille].

Blocq, P. (1888). Sur une affection caractérisée par de l'astasie et de l'abasie. *Archives de Neurologie*, *15*(43), 24–51; (44), 187–211.

Bourneville, D.-M. (1878). *Louise Lateau ou la stigmatisée belge: Science et miracle*. A. Delahaye.

Charcot, J.-M. (1870). Note sur un cas de paralysie glosso-laryngée suivi d'autopsie. *Archives de Physiologie normale et pathologique*, *3*, 247–260.

Charcot, J.-M. (1889a). *Du traitement de l'ataxie locomotrice par la suspension suivant la méthode du Dr Motchutkowsky: Leçons du Mardi à La Salpêtrière; Leçon du 15 janvier 1889*. Le Progrès Médical et Lecrosnier & Babé.

Charcot, J.-M. (1889b). *Leçons du Mardi à La Salpêtrière-Policlinique 1888–1889*. Le Progrès Médical et E. Lecrosnier & Babé.

Charcot, J.-M. (1892). *Œuvres complètes*. Bureaux du Progrès médical et Louis Battaille.

Charcot, J.-M., & Joffroy, A. (1869). Deux cas d'atrophie musculaire progressive avec lésions de la substance grise et des faisceaux antérolatéraux de la moelle épinière. *Archives de Physiologie normale et pathologique*, *2*, 354–367, 744–760.

Charcot, J.-M., & Richer, P. (1887). *Les démoniaques dans l'art*. Adrien Delahaye et Émile Lecrosnier.

Charcot, J.-M., & Richer, P. (1889). *Les difformes et les malades dans l'art*. Lecrosnier et Babé.

Duchenne, G. (1858). De l'ataxie-locomotrice, recherches sur une maladie caractérisée spécialement par des troubles généraux de la coordination des mouvements. *Archives Générales de Médecine* Ve série, *12*, 641–652/1859; Ve série (1), 36–62/1859; Ve série(2), 158–181/1859; V° série(4), 417–451.

Duchenne, G. (1860). Paralysie musculaire progressive de la langue, du voile du palais et des lèvres. *Archives Générales de Médecine* 5e série 16, 283–296, 431–445.

Duchenne, G., & Joffroy, A. (1870). De l'atrophie aiguë et chronique des cellules nerveuses de la moelle et du bulbe rachidien. *Archives de Physiologie normale et pathologique*, *3*, 499–515.

Féré, Ch. (1890). La queue de satyres et la queue des faunes. *Nouvelle Iconographie de La Salpêtrière*, *3*, 45–48.

Germain, F. (1879). *Des lésions trophiques et des troubles sensitifs dans les gelures anciennes* [Thèse Paris n°118, A. Parent].

Gilford, H. (1897). On a condition of mixed premature and immature development. *Medico-Chirurgical Transactions*, *80*, 17–45.

Gilford, H. (1904). Progeria: A form of senilism. *Practitioner*, *73*, 188–217.

Gilles de la Tourette, G. (1889). De la technique à suivre dans le traitement par la suspension de l'ataxie locomotrice progressive et de quelques autres maladies du système nerveux. *Nouvelle Iconographie de La Salpêtrière*, *2*, 85–91.

Guinon, G. (1890). Un cas de carcinose vertébrale. *Nouvelle Iconographie de La Salpêtrière*, *3*, 73–81.

Hutchinson, J. (1886). A case of congenital absence of hair with atrophic condition of the skin and its appendages. *Lancet*, *1*, 923.

Laborde, J.-V. (1896). *La lutte contre l'alcoolisme, manuel à l'usage des enfants des écoles*. Librairie de Sciences Générales.

Lalouette, J. (2002). *La République anticléricale XIX^{e}—XX^{e} siècle*. Le Seuil.

Landouzy, L. (1886). Note sur le faciès myopathique et sa valeur dans la sémiotique de l'enfance et de l'adulte. *Gazette Hebdomadaire de Médecine et de Chirurgie*, *23*(45), 730–733.

Marie, P. (1886). Sur deux cas d'acromégalie; Hypertrophie singulière non congénitale des extrémités supérieures, inférieures et céphalique. *Revue de Médecine*, *6*(4), 297–333.

Meige, H. (1898). Sur une statuette représentant l'infantilisme myxœdémateux. *Nouvelle Iconographie de La Salpêtrière*, *11*, 136–140.

Morvan, A. (1883). De la parésie analgésique à panaris des extrémités supérieures ou paréso-analgésie des extrémités supérieures. *Gazette hebdomadaire de Médecine et de Chirurgie*, *20*(série 2)(35), 580–583; (35), 590–594; (35), 624–626.

Morvan, A. (1886). Nouveaux cas de paréso-analgésie des extrémités. *Gazette Hebdomadaire de Médecine et de Chirurgie*, *23*(série 2)(32), 521–523; (33), 537–540; (34), 555–557.

Motchutkowsky, O.-O. (1883). Application of suspension of patients to the treatment of some disorders of the spinal cord. *Vratsch*, *17–21*, 258–325.

Motchutkowsky, O.-O. (1889). Treatment of certain diseases of the spinal cord by means suspension. *Brain*, *12*(3), 326–345.

Navarro, C.-L., Poitelon, Y., & Lévy, N. (2008). Lamines A et syndromes progéroïdes: Une farnésylation persistante aux conséquences dramatiques. *Médecine Sciences*, *24*, 833–840.

Raymond, F. (1900). *Du myxœdème infantile et des autres formes de myxœdème; pathogénie et traitement: Leçons sur les maladies du système nerveux (année 1897–1898)*. Octave Doin.

Richer, P. (1890). *Anatomie artistique: Description des formes extérieures du corps humain au repos et dans les principaux mouvements; Avec 110 planches renfermant plus de 300 figures*. Plon-Nourrit.

Richer, P. (1892). *Paralysies et contractures hystériques*. O. Doin.

Richer, P. (1893). *Canon des proportions du corps humain*. Delagrave.

Richer, P. (1894). De la station et de la marche chez les myopathiques. *Nouvelle Iconographie de La Salpêtrière*, *7*, 129–141.

Richer, P. (1895–1). Note sur la forme extérieure du corps dans la maladie de Parkinson. In *Comptes rendus hebdomadaires des séances et mémoires de la Société de Biologie (séance du 21 décembre 1895) 2 X série* (pp. 834–837).

Richer, P. (1895–2). *Physiologie artistique de l'homme en mouvement*. O. Doin.

Richer, P. (1896). *Notice sur les titres et travaux scientifiques*. L. Battaille.

Richer, P. (1897). Dialogues sur l'art et la science. *La Nouvelle Revue*, *19*(107), 41–54, 228–243, 440–452.

Richer, P. (1933). *Autobiographie* [Manuscrit ms837 catalogue]. Catzarts-Beaux-Arts Paris.

Richer, P., & Gilles de la Tourette, G. (1889). *Hypnotisme*. In A. Dechambre (Ed.), *Dictionnaire encyclopédique des sciences médicales série 4 tome 15 (HYL—INH)* (pp. 67–132). G. Masson & P. Asselin.

Richer, P., Gilles de la Tourette, G., & Londe, A. (1888). Avertissement. *Nouvelle Iconographie de La Salpêtrière*, *1*(1), 1–4.

Richer, P., & Meige, H. (1894). De la station sur les talons chez les myopathiques. *Revue Neurologique*, *2*(12), 345–353.

Richer, P., & Meige, H. (1895). Étude morphologique sur la maladie de Parkinson. *Nouvelle Iconographie de La Salpêtrière*, *8*, 361–370.

Sayre, L. (1877). *Spinal disease and spinal curvature, their treatment by suspension and the use of the plaster of Paris bandage*. Smith Elder.

Schultze, F. (1882). Beiträge zur Pathologie und pathologischen Anatomie des centralen Nervensystems: Über Splat-, Höhlenund Gliombildung im Rückenmarke und in der Medulla oblongata. *Archiv für pathologische Anatomie und Physiologie und für klinische Medicin*, *87*(3), 510–540.

Sée, M. (1875). *Recherches sur l'anatomie et la physiologie du cœur*. G. Masson.

Tédenat, E. (1880). *Des gelures: Thèse présentée au concours pour l'agrégation (section de chirurgie)*. A. Delahaye et E. Lecrosnier.

von Kahler, O. (1882). Casuistiche Beiträge. *Prager Medicinische Wochenschrift, 7*(42), 413–415; *7*(44), 433–436; *7*(45), 443–445.

von Weidenbach, C. (1817). *De Tabe dorsuali*. Dissertatio Berolinum, typis Haynianis.

Walusinski, O. (2012). History of the emergence and recognition of syringomyelia in the 19th century. *Vesalius*, *18*(1), 18–29.

Walusinski, O. (2023). *Paul Richer (1849–1933), une neurologue professeur à l'École des Beaux-Arts*. Oscitatio.