Jules Bernard Luys in Charcot’s Penumbra

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Abstract
Jules Bernard Luys (1828–1897) is a relatively unknown figure in 19th century French neuropsychiatry. Although greatly influenced by Jean-Martin Charcot (1825–1893), Luys worked in the shadow of the ‘master of La Salpêtrière’ for about a quarter of a century. When he arrived at this institution in 1862, he used microscopy and photomicrography to identify pathological lesions underlying locomotor ataxia and progressive muscular atrophy. He later made substantial contributions to our knowledge of normal human brain anatomy, including the elucidation of thalamic organization and the discovery of the subthalamic nucleus. Luys’s name has long been attached to the latter structure (corps de Luys), which is at the center of our current thinking about the functional organization of basal ganglia and the physiopathology of Parkinson’s disease. As head of the Maison de santé d’Ivry, Luys developed a highly original view of the functional organization of the normal human brain, while improving our understanding of the neuropathological and clinical aspects of mental illnesses. In 1886, Luys left La Salpêtrière and became chief physician at La Charité hospital. Following Charcot, whom he considered as the father of scientific hypnotism, Luys devoted the last part of his career to hysteria and hypnosis. However, Luys ventured too deeply into the minefield of hysteria. He initiated experiments as unconventional as the distant action of medication, and became one of the most highly caricatured examples of the fascination that hysteria exerted upon neurologists as well as laypersons at the end of the 19th century.

In the second half of the 19th century, Jean-Martin Charcot (1825–1893) became one of the most famous neurologists of all time. His name was, and still is, intimately attached to La Salpêtrière hospital in Paris, where his 30-year-long dedication to clinical neurology and anatomopathology led to the creation of a great neurology school that was to exert a worldwide and long-lasting influence [1]. Charcot’s reputation attracted many young and promising scientists and medical doctors who were trained by the master, who then went on to become famous neurologists themselves, such as Joseph Babinski (1857–1932), Pierre Marie (1853–1940), Georges Gilles de la Tourette (1857–1904), and many others. At the height of his career, Charcot dominated La Salpêtrière and French neurology as a whole, and his prominent position left little room for those who were not part of his inner circle of friends and pupils. Jules Bernard Luys (1828–1897) was one of those neurologists who worked at La Salpêtrière in Charcot’s shadow, and this paper is devoted to him. Attempts will be made to provide an overview of the major accomplishments of this highly dedicated researcher and clinician who struggled to find his place in the sun, and whose career followed a trajectory that was strikingly parallel to that of Charcot.
A Short Biography

Jules Bernard Luys (fig. 1) was born in Paris on 17th August 1828. He was the son of Amédée Luys (1799–1887) and Anna-Clara Gillard (1802–1881), who were wealthy citizens originally from the small city of Naves in Savoie. Very little is known of Luys’s whereabouts during his youth, except that he made all of his classical and medical studies in Paris [2–5]. He started his internship in 1853 and, exactly like Charcot, he immediately initiated a series of anatomical studies under the direction of Charles Robin (1821–1885), who championed the use of the microscope in clinical medicine in France as Rudolf Virchow (1821–1902) did in Germany. At the age of 28 years, Luys wrote a memoir on the use of the microscope in pathological anatomy, diagnosis and treatment of diseases (Du microscope, de ses applications à l’anatomie pathologique, au diagnostic et au traitement des maladies), which was rewarded by the Académie de médecine. He became doctor of medicine in 1857 after having successfully defended a thesis on the histopathology of tuberculosis. This sentence – borrowed from Jean Cruveilhier (1791–1874), professor of pathological anatomy at the Paris Medicine School – opening his thesis clearly reveals Luys’s organicist view of diseases: ‘Metaphysical causes will vanish as the pathological anatomy of textures will progress.’

In 1860, Luys failed in his first attempt to obtain a professorship (concours d’agregation), with a thesis on puerperal fever. Among his direct competitors at this concours were Charcot himself, who was finally admitted after his first failure in 1857, the neurologist Alfred Vulpian (1826–1887), the alienist Victor Marcé (1828–1864), who arrived first at this competition, and Pierre Potin (1825–1901), who was to become a famous cardiologist. Luys was nevertheless elected médecin des hôpitaux de Paris in 1862 and immediately assigned to La Salpêtrière, probably as chief physician of the infirmary [3, 5]. The year 1862 also saw the arrival of Charcot and Vulpian at the same institution, which was then a hospice for old women (Hospice pour la vieille femme). In 1863, Luys failed a second time at the concours d’agregation despite a remarkable thesis on hereditary neuropsychiatric diseases. Following the sudden death of Victor Marcé in 1864, Luys was...
placed in charge of the *Maison de santé d’Ivry*, a renowned mental health center founded by the famous alienist Jean-Étienne Esquirol (1772–1840) and previously headed by psychiatrists as prestigious as Jules Baillarger (1809–1890) and Jacques-Joseph Moreau de Tour (1804–1984). Luys and his wife Clémence Bied-Charreton (?–1890) then settled at Ivry-sur-Seine, a small city of the Val-de-Marne where Luys acted as mayor in 1869 and 1870.

Luys began his teaching career in 1866, at exactly the same time as Charcot started his extracurricular lecturing at La Salpêtrière. Luys taught on brain anatomy and pathology at l’École pratique des Hautes Études and, as was the case for Charcot, some of Luys’s interns gathered the text of these lectures and published them [6]. Luys had two sons, Henri (1866–1927) and Georges (1870–1953), who both became medical doctors. Henry chose to work in the public health domain, whereas Georges followed his father for some time into his unfortunate incursion into the field of hypnotism and neurosis. Among other duties, Georges was in charge of taking photographs of his father’s patients during the famous set of experiments on the action of various chemical compounds at a distance (see below). Georges progressively left this hazardous domain to become a renowned urological surgeon. During his long career, he published several remarkable urology treatises that were widely diffused and even translated into English [7].

In 1876, Jules Bernard Luys, then a renowned anatomo-pathologist, took part with Charcot and Victor Dumont-Pallier (1826–1899), who was chief physician at La Charité hospital, in a special commission (la Commission du Burquisme) formed by Claude Bernard (1813–1878), then President of the Société de Biologie. This Commission was created to examine the validity of metallotherapy, that is, the treatment of various neurological disorders with metal plaques or amulets, as advocated by Victor Burq (1822–1884). Their participation in this commission raised a vivid interest in hysteria and hypnosis within Luys and Charcot, a discipline to which they both devoted the last part of their career.

In recognition of his contribution to our knowledge of the anatomy and pathology of the central nervous system, Luys was elected in 1877 to the Académie de Médecine, one of the most prestigious medical institutions in France, and named *Chevalier de la Légion d’honneur* by the French government. In collaboration with the alienist Benjamin Ball (1833–1893), a former student of Jacques-Joseph Moreau de Tours and the first holder of the Chair of Mental Diseases created in 1879, Luys founded the journal *l’Encéphale*, which has survived up to this day and in which Luys published the results of many of his original studies. The year 1886 marked a rupture in Luys’s career as he left La Salpêtrière to occupy the position of chief physician at La Charité hospital, where he would devote most of his time to his new passion: hysteria and hypnosis. Luys officially retired from academia in 1893, the year of Charcot’s death. He received the title of *Officier de la Légion d’honneur* that very same year in recognition of his contribution to the medical field [3, 5].

Although afflicted by debilitating deafness during the last years of his life, Luys continued to actively participate in various academic sessions, and regularly published the results of his neuroanatomical studies. His last major public appearance was the talk on the brain structure that he gave at the Munich Congress of Psychology in 1896. Luys died suddenly on Saturday evening, 21st August 1897, at the age of 69 years. His death occurred only 3 days after the beginning of his summer vacation at Divonne-les-Bains (Ain). Beside him were his second wife, Berthe (born Jacquot de Brigeat, widow of a Senator) and his younger son, Georges. After the usual formalities, his body was brought to his beautiful Parisian townhouse, 20 rue de Grenelle, where it remained until the funeral held at Saint-Thomas-d’Aquin’s church on Wednesday 25th August 1897. Luys was buried the same day at the Montparnasse cemetery.
in the presence of a handful of colleagues and friends [5].

**Contributions to Human Brain Anatomy**

Following his nomination as médecin des hôpitaux in 1862, Luys started intensive work on the anatomical, pathological and functional organization of the central nervous system. Among other things, he contributed significantly to the identification of the pathological lesions underlying locomotor ataxia and progressive muscular atrophy, but his ambition was really to embrace the organization of the nervous system as a whole. In 1865, he published the magnum opus of the first and most prolific part of his scientific career. It took the form of a remarkable treatise entitled *Recherches sur le système cérébro-spinal, sa structure, ses fonctions et ses maladies* (Studies on the structure, functions and diseases of the cerebro-spinal system) [8], which was presented to the Académie de médecine by Charles Robin and rewarded by both the medicine and science academies. This copious volume, accompanied by an 80-page atlas, offered many original insights and descriptions that significantly contributed to the knowledge of human brain anatomy. Luys’s textbook contains many highly original contributions to neuroanatomy, including the discovery of two forebrain structures that still bear his name: the centre médian, a major thalamic nucleus, and the subthalamic nucleus – which are now recognized as two major relays in basal ganglia circuitry [9, 10].

Luys realized, probably for the first time, that the thalamus was composed of several distinct functional units, each unit dealing with specific sensory inputs and relaying this sensory information to specific cortical loci [8]. He proposed that each cortical area that received inputs from specific thalamic units or centers project back to the same centers; thus, foreseeing the existence of the important corticothalamic projection system. Luys identified four major thalamic centers to which he attributed a specific functional modality: (1) the *centre antérieur*, related to olfaction; (2) the *centre moyen*, related to vision; (3) the *centre médian*, related to somatic sensory input (fig. 2a); (4) the *centre posterior*, related to audition. He envisaged the thalamus as a brain structure interposed between the purely reflex phenomena of the spinal cord and the higher cognitive activities of the brain. He considered the thalamic functional centers as regions where sensory impressions were condensed, stored and elaborated into a new, perhaps more intellectualized, form of energy that ultimately serves to ‘erect’ (excite) the cortical substance. Hence, Luys not only emphasized the role of the thalamus as a sensory relay, but also anticipated, in some ways, the role that the thalamus might play in attention and consciousness.

It is also in his 1865 treatise [8] that Luys provided the first description of the lens-shaped subthalamic nucleus (fig. 2b), which he rather inappropriately termed the bandelette accessoire des olives supérieures (accessory band of the superior olives). This improper term was criticized by August Forel (1848–1931), who nevertheless named the structure Luys’s body (*Luys’schen corpus* or *corpus Luysii*) in recognition of its discoverer [11]. Luys saw the subthalamic nucleus as a center that dispersed the cerebellar influence upon the corpus striatum and played a ‘crucial role in the synthesis of automatic motor actions’ [8, 9]. Hence, Luys did not only discover the subthalamic nucleus, but he was also the first to think about this structure as being intimately linked to the basal ganglia. Luys also traced the nervous fibrils that link the subthalamic nucleus with the globus pallidus (the subthalamopallidal connection of the current literature) and described a fiber projection from the cerebral cortex to the subthalamic nucleus. He also clearly envisaged the fact that the various areas of the cerebral cortex are directly represented at the level of the striatum via the corticostriatal...
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projections (les projections corticostriées) [8, 9]. Many of these structures and fiber pathways are central to our current thinking about the anatomical and functional organization of the basal ganglia, as well as to the physiopathology of Parkinson’s disease [12].

Luys also wrote several papers on the normal and pathological anatomy of various brain structures or regions, including a manuscript entirely devoted to the cerebral cortex in which he made ample use of photomicrography, a novel technique at that time. A large volume entitled Iconographie photographique des centre nerveux (Photographic Iconography of the Nervous Centers), was particularly important in this area [13]. This remarkable atlas, which was published

Fig. 2. Luys’s first drawings of the various thalamic centers and the subthalamic nucleus. a Frontal section through the human thalamus showing 2 of his 4 thalamic centers: the centres moyens (9, 9’) and the centres médiants (10, 10’). b Frontal section of the human brain. The subthalamic nucleus (19) termed substance grise accessoire des olives supérieures is pictured as an elongated band that lies immediately adjacent to the so-called olives supérieures (17), which correspond to the red nuclei. The drawing also shows the typical fibrillary arcades (arches) that separate the various segments of the lentiform nucleus, as well as the lenticular nucleus itself from the subthalamic nucleus, which is drawn here as if it was a third pallidal segment. Reproduced from Luys’s Recherches sur le système cérébro-spinal [8], corresponding to plates 23 (a) and 24 (b) of the atlas that illustrates the treatise.
in 1873, shows high-quality photomicrographs of serial sections of human brains in frontal, sagittal and horizontal planes, accompanied by beautiful drawings identifying the various structures seen on each photomicrograph.

Luys used his vast knowledge of the structure of the nervous system to progressively develop a highly personal view of how the brain works. A synthesis of his ideas on cerebral functions was published in 1876 in a small book entitled *Le cerveau et ses fonctions* (The brain and its functions) [14]. In this book, Luys makes an interesting analogy between the simple reflex that occurs at the spinal cord level and the much more complex phenomenon that allows sensory stimuli to be transformed and ‘reflected’ into motor manifestations through a series of complex events that occur at the various stages of the neuraxis. He starts by emphasizing the fact that the central forebrain nuclei (les noyaux gris centraux), which are composed of the thalamus (la couche optique) and the basal ganglia (le corps strié), occupy a central position in brain organization. He then illustrates how the peripheral sensory information is conveyed through the inferior converging fiber system to the thalamus, where it is ‘spiritualized’ before being relayed to the small-celled upper layers of the cerebral cortex, which he considered as the true *sensörium commune*. The nervous impulse is then transferred locally to the large-celled, deeper layers of the cerebral cortex, which he considered as the effector or motor part of the cortex. The impulse is then relayed via the superior converging fiber system to the striatum, where it is ‘materialized’ before reaching the somatic muscles at the periphery (fig. 3). This book, which contains several other interesting analogies, was received with reservation by his colleagues, but nevertheless became one of the best-sellers of the International Scientific Library. It went through 7 editions and was translated into German and English [5].

**The Minefield of Hypnosis and Hysteria**

Besides neuroanatomical and neurological work, Luys contributed significantly to the study of neuropsychiatry. The clinical and pathological observations on mental diseases that he made while head of the *Maison de santé d’Ivry* were brilliantly summarized in his voluminous *Traité clinique et pratique des maladies mentales* (Clinical and practical treatment of mental diseases) published in 1881 [15] and for which he received the prestigious Lallemand Prize of the *Académie de Médecine*. In this treatise, Luys underlines the close links that he thought existed between morbid states and normal psychic activities and advocates the idea that madness was nothing else than a malfunction of brain psychological activities. Furthermore, a critical evaluation of the various approaches used at that time to treat mental diseases can be found in another book entitled *Le traitement de la folie* (Treatment of Madness) [16]. Published in 1893, this book offers a lucid synthesis of Luys’s long and valuable experience with patients suffering from mental illnesses. It also provides a complex and detailed nosological classification of mental illnesses that did not survive because it was largely based on ill-founded neurobiological hypotheses [3].

The year 1886 marks the start of a second, but much less glowing, career for Jules Bernard Luys. Having just been named senior physician at La Charité hospital, Luys decided to devote most of his time to his new passion: hysteria as seen through hypnosis. This decision was strongly influenced by Charcot who, in early 1880s, became interested in the same subject and validated the use of hypnosis as a means to investigate the psychological aspects of brain functioning. Luys considered Charcot as ‘one of the fathers of modern hypnotism; an inquisitive, gifted and sensitive scholar who helped hypnotism to conquer its place in the scientific domain’ [17]. At the same time, he overtly criticized Charcot’s magisterial authority that impeded the development of the independence and personal initiative of his pupils. He was also
Fig. 3. Luys’s artistic talent and profound knowledge of brain anatomy allowed him to provide interesting representations of the functional organization the human brain based on the anatomical knowledge of the time. This peculiar figure illustrates Luys’s view of the various sensory-motor processes that condition human brain activity. The sensory inputs (visual, auditory, tactile, olfactory) are described as reaching their respective centers (ascending arrows) within the thalamus (THAL), where they target large ganglionic cells before irradiating toward specific regions of the cerebral cortex, which Luys referred to as the ‘sensorium’. The neural information is then reflected upon the large cells of the striatum (STR) before propagating itself (descending arrows) along the various segments of the neuraxis. Like most neurologists of his time, Luys believed that central nervous system neurons formed a single, vast and multifaceted network. His reticularist view of brain organization is obvious in this drawing, which depicts thalamic, cortical and striatal neurons having long processes that merge within one another. Reproduced from Luys’s *Le cerveau et ses fonctions* [14] (with abbreviations added later).
bothered by the secrecy that Charcot imposed over the unorthodox clinical studies that were being conducted at La Salpêtrière at that time.

Luys nevertheless decided to follow the avenue recently opened up by Charcot and embarked enthusiastically into the field of hypnosis and hysteria. Greatly influenced by Dumont-Pallier, Luys tried to create a specific school on hysteria, which became known as l’École de la Charité and whose ideas lay somewhere between those of the well-established and authoritative school of La Salpêtrière and those of the new and challenging school of Nancy headed by Hippolyte Bernheim (1840–1819) [3, 5]. Protected by a candid faith in his own research, Luys became infatuated with the baffling Dr. Gérard Encausse (1865–1916). This enigmatic individual, best known in occultist milieu as the Mage Papus [18], became chief of Luys’s hypnotherapy laboratory. Together, Luys and Encausse designed extravagant experiments whose results were reported in minute detail to different learned societies. In doing so, he became perhaps the most extreme example of the fascination that hysteria exerted at the end of the 19th century upon various individuals, including those with a supposedly rational and scientific mind. Luys invented different mirror systems that he used to hypnotize several patients at the same time. The painter Georges Moreau de Tours (1848–1901), the son of the alienist Jacques-Joseph Moreau, has aptly rendered the ambiance of these wild clinical sessions in a painting entitled Les fascinés de la Charité, which he presented at the Salon des Champs Elysées in 1890. This lively
painting depicts a group of about ten women and a few men sitting around a sort of skylark mirror and whose facial expression vividly expresses the change in their mood (joy, fear, pain, irresistible attraction or frank repulsion) induced by the rotation of the mirror. A young woman stands up with her hands raised to heaven in a state close to ecstasy. In the rear portion of this small room of La Charité hospital, Luys and a few of his pupils closely follow the various phases of the experiment (fig. 4). This work by Georges Moreau, who was recognized as the illustrator par excellence of hypnotism and neurosis, obviously has something in common with the famous painting by Pierre-André Brouillet (1857–1914) entitled Une leçon clinique à la Salpêtrière, which shows Charcot amongst his students during one of his famous Tuesday morning lessons devoted to hysteria.

Luys’s experiments on the action of medication at a distance are particularly revealing of his state of mind at that time. These led to the report of hypnotized patients showing marked emotional changes simply at the sight of test tubes containing various drugs and toxic substances (fig. 5). These effects were described as abrupt, labile and highly variable; changing the side from which the test tube was presented to the patient was said to produce completely opposite behavioral changes [17, 19]. Luys summarized the results of these strange experiments in 1887 in a book entitled Les émotions chez les sujets en état d’hypnotisme (Emotions in hypnotized subjects), which contained many photographs of hypnotized female patients displaying emotional states that varied according to the type of drugs or toxic substances presented to them [17]. Luys sent a copy of this book to Charcot with the following inscription: ‘To my eminent colleague Dr. Charcot. Allow me to offer you this work as an offspring of the good seeds that you sowed’. Inspection of this inscribed copy of Luys’s book at the Charcot Library at La Salpêtrière revealed that Charcot paid little attention to the volume since about two-thirds of its pages are still uncut.

On August 1887, Luys reported his results on the distant action of various drugs and toxic substances at the Académie de médecine. During the course of his allocution, he raised serious concerns in the mind of the academy members when he alluded to the possible social and medico-legal implications of such an approach. At the end of his talk, Luys left the audience totally flabbergasted.
by pointing to the possibility that ‘culprit hands’ might use the devastating physical effects of certain chemical compounds to kill an hypnotized individual, a ‘silent crime’ that would be difficult to elucidate [20]. In face of such troubling assertions, the Académie de médecine decided to set up a special commission to investigate the validity of Luys’s findings on the distant action of medication in hypnotized individuals. The Commission de l’hypnotisme, as it became known, was headed by the anatomo-pathologist Hippolyte Hérard (1819–1913). It also comprised Étienne Bergeron (1817–1900), a specialist in social and preventive medicine, Paul Brouardel (1837–1906), a world authority in forensic medicine, Charles-Marie Gariel (1841–1924), a physicist and medical doctor, and Georges Dujardin-Beaumetz (1833–1895), a therapeutician who acted as the Commission’s secretary (Rapporteur). Initially, Charcot was also asked to act as a member of this Commission but, for reasons that are still obscure, he declined the invitation. In any event, early in 1888, the Commission organized several clinical sessions that were held at the Academy itself, which saw Luys consciously repeating his experiments on Esther, Gabrielle and the other hypnotized patients to prove his assertions. Several months later, the Commission members were still unconvinced of the validity of Luys’s results. In his final report, Dujardin-Beaumetz concluded [21]:

Although the members of the Commission recognized the extreme good faith of Dr. Luys, they believe that the effects produced by test tubes placed at a distance from hypnotizable patients could much more easily be explained by the caprice, fantasia and memory of the experimental subjects than by the medication contained within the tubes. [...] None of the effects noted by the Commission members could be ascribed to the nature of the substances contained within the tubes and, consequently, neither therapeutic nor legal medicine had to take such effects into account.

Luys paid no heed to this harsh statement from his peers on the scientific merit of his experiments. Instead of undertaking the double-blind studies suggested by the commissioners, he sank even deeper into the world of irrational by engaging himself directly into the fields of animal magnetism and spiritualism. Luys pursued his studies on ‘experimental hypnosis’ through public sessions that were held at his clinical service at La Charité hospital and, occasionally, at his personal residence on de Grenelle street [3, 5]. These live demonstrations attracted not only specialists but also le Tout-Paris, including members of the popular press, who often reacted in a highly critical manner to such singular assemblies. One of the most virulent Parisian journalists described these Folies-Cliniques as being particularly suited for ‘decadent Parisians and neurotic mondaines, forming an elegant and blasé audience that rushes to Doctor Luys’s experiments to get their own imagination brutalized’ [22]. Léon Daudet (1867–1942), the son of the famous novelist Alphonse Daudet (1840–1897), an intimate friend of Charcot, was an intern at La Charité when Luys was directing these wild sessions. He described vividly how Luys, to whom the idea of mystification was completely unknown, could remain unperturbed for hours among his subjects, Esther, Gabrielle and the others, who, under the guidance of Luys’s own interns, had rehearsed their performance days in advance, while enjoying special treatments from the patron in their hospital quarters [23].

During the last 5 years of his life, Luys plunged even deeper within the world of irrational and esotericism by undertaking a series of studies on the storage of cerebral activities within magnetic crowns [24] and on the direct visualization of brain and body emanations [25].

Concluding Remarks

Virtually all of Luys’s colleagues, including those who expressed the most severe critiques toward his naive incursion into the minefield of hysteria, were supportive of this vigorous, active and industrious individual [3, 5]. They were all convinced
of the complete good faith of this courteous and cordial man who liked receptions, music and good food, but whose foray into the study of distant effects of drugs cost him part of the scientific renown he took nearly 40 years to acquire. Ernest Cadet de Gassicourt (1826–1900), then Secretary of the Académie de Médecine, pronounced a brief posthumous eulogy of Luys at the academy’s session held on 14th December 1897. In his allocution, Cadet de Gassicourt, who had known Luys personally for more than 40 years, praised the honesty of this valiant investigator who, despite his unfortunate last-minute incursion in the field of hysteria, made an outstanding contribution to our knowledge of the anatomical and functional organization of the human brain.

But what to think of such a radical turnaround, such an obvious absence of critical sense in a 60-year-old man previously endowed with a remarkable intellectual rigor and exceptional gifts for clinical and anatomical observations? Was this radical change the result of an erosion of judgment due to aging or simply the reflection of a fascination for the fabulous, a need for the supernatural at the end of a century that was dominated by the materialist and positivist philosophy of Auguste Comte (1798–1857)? There are no easy answers to such questions, but it is remarkable that several other famous neurologists were also spellbound by hysteria at the end of the 19th century. For example, Joseph Babinski (1857–1932) actively investigated the possibility of transferring certain hysterical manifestations from one subject to another through a simple magnet [26]. The great Charcot himself was released honorably from this spell by discovering, only a few months before his death, that faith could heal [27]. The tail end of the 19th century must have been a very bizarre period, a time that saw the rebirth of mysticism right in the midst of materialism [28, 29]. The novelist Joris-Karl Huysmans (1848–1907) is probably the one who best expressed the fin-de-siècle thinking that prevailed at the end of the 19th century. In his novel Là-bas (Down there), Huysmans had one of his characters say the followings words: ‘What a strange epoch! It is when positivism is at its height that mysticism wakes up and that the madness of occultisms emerges, but it has always been the case. The tails of centuries are very similar; they all stagger and all of them are blurred. Magic raises when materialism prevails and this phenomenon reappears at each centenary’ [30].

References