

Simarro Lacabra, Luis

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Luis Simarro Lacabra (1851-1921)

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The following article is based on a paper, 'Luis Simarro Lacabra [1851-1921]: From Golgi to Cajal through Simarro, via Ranvier?', published by Nieves Fernández and C. S. Breathnach in the Journal of the History of Neurosciences, 2001; 10: 19-26. Thanks are due to Swets & Zeitlinger Publishers, The Netherlands for permission to reprint an extended summary of the article. Permission has been granted by the Museo Sorolla, Madrid, to reproduce Figure 1.



Figure 1: 'The Investigation', painted in 1897 by Joaquín Sorolla y Bastida (1863-1923), portrays Luis Simarro in white coat, surrounded by his pupils at his laboratory bench.

'The Investigation', painted in 1897 by Joaquín Sorolla y Bastida (1863-1923), portrays Luis Simarro in white coat, seated at a bench suitably arrayed with bottles of histological stains, preparing material for microscopic examination (Figure 1). The neurohistologist is surrounded by his pupils, including the future psychiatrist Eusebio Gyarre and neurologists Pío del Río Hortega (1882-1945) and Nicolás Achúcarro Lund (1880-1918), in the laboratory in his home at no. 41 Arcos de Santa Maria Street (now named Augusto Figueroa), Madrid.

Luis Simarro Lacabra was born in Rome on 6 December 1851 while his parents from Jativa, Valencia were travelling in Italy (López Piñero, 1983). His father, Ramón, was a moderately successful

painter who was forced by illness in 1853 to return to Spain where he died from pulmonary tuberculosis two years later. After his death his distraught widow committed suicide, and their three-year-old son was left to the care of his paternal uncle, a photographer and schoolteacher.

The orphaned boy excelled at school and, helped by affluent neighbours, including Vincente Boix (1813-1880), the liberal art historian, he began medical studies in Valencia in 1868. Inevitably he was caught up in the Revolution of 1868-73, manned the barricades in 1869 and in 1872, and at the Valencian *Ateneo* he championed positivism in the application of philosophical theories to politics and religion. As a result he fell foul of the professor of surgery and was suspended in the spring of 1873 after he presented himself before the examiners (Kaplan, 1971a).

In the autumn after his suspension, Simarro moved to Madrid, and soon became involved in the scientific and philosophical disputes raging in the *Ateneo* there (López Piñero, 1983). Nonetheless he graduated with the highest honours in January 1874 and proceeded to his doctorate with a thesis on environmental hygiene a year later. Fortune smiled on him because the session 1873-4 was the only year in which the revolutionary provision for free medical education under the Free Education Act of 1868 was in effect.

It was in 1874 that Aureliano Maestre de San Juan (1828-1890), recently appointed to the first professorship of histology, set up a Free Society of Histology in which Simarro (who edited *El Anfiteatro Anatómico Español*) and his friends Carlos María Cortezo (1850-1933), surgeon Rafael Martínez Molina (1816-1888) and one of Santiago Ramón y Cajal's (1852-1934) first science teachers, Leopoldo López García (1854-1932), were founder members (Fernández-Galiano, 1994). (Incidentally, in 1876 it was Maestre who examined Cajal for his doctorate as a "free student" - i.e. not resident in Madrid - and the candidate passed "easily" in histology, "although he had never seen a cell and could not make a simple microscopic examination" (Fernández-Galiano, 1994)). Simarro began his own microscopic studies in the Velasco Museum of Anthropology (López Piñero, 1983).

Simarro was appointed director of the insane asylum of Santa Isabel at Leganés just outside Madrid in 1877, but he came into conflict with the local bishop when his enthusiasm for histology - coloured by his avowed Darwinian approach to biology - led him to carry out postmortem examinations on the brains of patients who died in the hospital. Reprimanded and forbidden to anatomize the physical basis of insanity, he resigned and in 1880 went to Paris to further his knowledge and perfect his technique (López Piñero, 1983).

For five years from 1880 Simarro steeped himself in evolutionary ideas in biology and revolutionary ideologies in history as outlined by Renan (1823-1892). Mathias Duval's (1844-1907) physical anthropology and Jean Martin Charcot's (1825-1893) clinical neurology impressed him greatly, as did the degenerative theories of the alienist Jacques Joseph Valentin Magnan (1835-1916). Assiduously he listened to the lectures on general anatomy of Louis Antoine Ranvier (1835-1922), the histologist remembered for the nodes he described on myelinated nerve fibres (1878); strangely enough, in spite of Ranvier's disdain for the capricious histological method described by Camillo Golgi (1844-1914) in 1873, it was from him that Simarro learned the silver impregnation technique (Simarro, 1881).

Simarro was not long returned to Spain when on Palm Sunday in April 1886 the Bishop of Madrid, Narciso Martínez Izquierdo, was assassinated by one of the clergy, Cayatano Galeote Cotilla, as he left the cathedral. Galeote's subsequent behaviour led to doubts about his sanity and Simarro led the unsuccessful medical defence of the prisoner (López Piñero, 1983). From his initial interest in clinical neurology Simarro was led into the study of psychology and psychiatry, and after his return to Madrid his private practice gradually changed from neurology to psychiatry, a trend undoubtedly hastened by his forensic experience (CMC, 1921). Anatomical lesions were the basis of all neurological and psychiatric diseases, he boldly stated in his *Vademecum clínico-terapéutico* (1898). The influence of German developments in psychology and psychiatry, particularly those of Wilhelm Wundt's (1832-1920) experimental psychology and Emil Kraepelin's (1856-1926) classification and care of the insane, have been sedulously traced by Temma E. Kaplan in Simarro's case notebooks from 1898 to 1921 held in San José de Calasanz (Kaplan, 1971b). In 1902 he was

appointed to the first chair of experimental psychology in Spain but, of necessity, he continued in private practice to support himself. He was greatly influenced by Ernst Haeckel's (1834-1919) morphological fallacy that "ontogeny recapitulates phylogeny" (1866), and by Theodor Ziehen's (1862-1950) criticism of Wundt's approach, contributing an introduction to Gonzalo Rodríguez Lafora's translation of Ziehen's compendium of *Physiological Psychology* (1910). By the time of his death on 19 June 1921 he was Madrid's most prominent psychiatrist (López Piñero, 1983).

In spite of all the energy he put into the popularization of science and revolutionary politics, it is his role as histologist that marks his lasting contribution - more especially his development of the silver bromide modification of Golgi's silver chromate method, based on the photographic techniques using sodium hyposulphate he may perhaps have learned from his uncle (López Piñero, 1983). Cajal later on modified Simarro's 'photographic process' and returned to the use of reduced silver nitrate using, however, the same basic concept.

Cajal recalled that in 1887 while visiting Madrid he was invited by Luis Simarro into the laboratory the neuropsychiatrist had set up in his home, and there Cajal saw a Golgi preparation for the first time, "*de visu* the marvellous revealing capacity of the silver chromate reaction," thereafter tenaciously "trying to correct its capriciousness and haphazard character" by double impregnation and application before myelination" (Ramón y Cajal, 1937). It was at a session of the Histology Society in 1887 that Cajal first encountered the Golgi method; and again in 1900 and 1903, when he had modified the method, Simarro made Cajal aware of the improvements. Cajal openly acknowledged his debt to Simarro indicating, moreover, that it was the turning point that led him to abandon general histology and concentrate on neurohistology (López Piñero, 1983).

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Special Features

Cajal on Simarro:

In a letter to Simarro's friend Carlos María Cortezo, Ramón y Cajal remarked that Simarro was not granted the appreciation he deserved for introducing, as Ranvier's disciple, the most modern

histological and physiological ideas to Spain; and he regretted that his fortuitous tutor, who "gave his time so freely, threw his talents to the winds in his popular lectures". Cortezo divined that the perfectionist in his close friend made him unwilling to present "incomplete" findings, but Simarro himself conceded that his busy clinical practice left him little time to carry forward the experiments necessary to sustain his arguments.

Cortezo, C. M. (1926) Luis Simarro, *Médicos ilustres del siglo XIX*, Madrid: E. Teodoro, pp. 5-32.

The Silver Link:

Although Cajal's methods "differed profoundly from Simarro's photographic process [so] as to form an entirely new method one cannot, however, deny the existence of a certain similarity of conception between the two processes in so far as both are based on silver-reducing power of certain photographic reagents."

Brontë Gatenby, J. & Cowdrey, E. V. (1928) *Bolles Lee's Microtome's Vade-Mecum*, London: Churchill, 9th edn.. pp. 563-570.

The Artist: Joaquín Sorolla y Bastida (1863-1923)

The artist, like his subject a gifted Valencian, was born on 27 February 1863 and orphaned when he was two years old (Bénézit, 1976). The early recognition of his talent earned admission to the Academy of San Carlos at the age of 15, and he later proceeded to father studies in Rome and Paris, before returning to Valencia. His paintings of Valencian peasants and fishermen brought him wide popularity, but his genre paintings and seascapes established his reputation as a major Spanish artist. A prolific painter he combined a restrained, muted Impressionism with narrative and anecdotal tastes of the late nineteenth century. His works are to be seen in many museums in Europe and North America; between 1910 and 1920 he executed fourteen murals portraying Spanish provincial themes for the Hispanic Society of America, New York. 'The Investigation' displays in an interior setting his ability to capture the brilliant colours and the sharp contrast of light and shade in which he delighted in his outdoor scenes, deftly executed in broad strokes. Sorolla died on 11 August 1923 at Cercedilla (Madrid).

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