



Medicine



# Santiago Ramón y Cajal

## The Nobel Prize in Physiology or Medicine 1906

### Biography



Santiago Ramón y Cajal was born on May 1, 1852, at Petilla de Aragón, Spain. As a boy he was apprenticed first to a barber and then to a cobbler. He himself wished to be an artist - his gift for draughtsmanship is evident in his published works. His father, however, who was Professor of Applied Anatomy in the University of Saragossa, persuaded him to study medicine, which he did, chiefly under the direction of his father. (Later, he made drawings for an atlas of anatomy which his father was preparing, but which was never published.)

In 1873 he took his Licentiate in Medicine at Saragossa and served, after a competitive examination, as an army doctor. He took part in an expedition to Cuba in 1874-75, where he contracted malaria and tuberculosis. On his return he became an assistant in the School of Anatomy in the Faculty of Medicine at Saragossa (1875) and then, at his own request, Director of the Saragossa Museum (1879). In 1877 he obtained the degree of Doctor of Medicine at Madrid and in 1883 he was appointed Professor of Descriptive and General Anatomy at Valencia. In 1887 he was appointed Professor of Histology and Pathological Anatomy at Barcelona and in 1892 he was appointed to the same Chair at Madrid. In 1900-1901 he was appointed Director of the «Instituto Nacional de Higiene» and of the «Investigaciones Biológicas».

In 1880 he began to publish scientific works, of which the following are the most important: *Manual de Histología normal y Técnica micrográfica* (Manual of normal histology and micrographic technique), 1889 (2nd ed., 1893). A summary of this manual recast with additions, appeared under the title *Elementos de Histología, etc.* (Elements of histology, etc.), 1897; *Manual de Anatomía patológica general* (Manual of general pathological anatomy), 1890 (3rd ed., 1900). In addition may be cited: *Les nouvelles idées sur la fine anatomie des centres nerveux* (New ideas on the fine anatomy of the nerve centres), 1894; *Textura del sistema nervioso del hombre y de los vertebrados* (Textbook on the nervous system of man and the vertebrates), 1897-1899; *Die Retina der Wirbelthiere* (The retina of vertebrates), 1894.

Apart from these works Cajal has published more than 100 articles in French and Spanish scientific periodicals, especially on the fine structure of the nervous system and especially of the brain and spinal cord, but including also that of muscles and other tissues, and various subjects in the field of general pathology. These articles are dispersed in numerous Spanish journals and various specialized journals of other countries (especially French ones). Some articles in Spanish by Cajal and his pupils appear in the *Revista Trimestral de Histología normal y patológica* (Quarterly review of normal and pathological histology) (1888 onwards), continuation of them appeared under the title *Trabajos del Laboratorio de Investigaciones biológicas de la Universidad de Madrid* (Communications of the Laboratory for Biological Research, Madrid University).

Cajal's studies on the structure of the cortex of the brain have been partly grouped together and translated into German by J. Bresler, 1900-1901.

Cajal is also the author of *Reglas y Consejos sobre Investigación Científica* (Rules and advices on scientific investigation), which appeared in six Spanish editions and was translated into German (1933).

Among the distinctions won by Cajal are the following: Member of the Royal Academy of Sciences of Madrid (1895); of the Royal Academy of Medicine of Madrid (1897); of the Spanish Society of Natural History and of the Academy of Sciences of Lisbon (1897); Honorary Member of the Spanish Medical and Surgical Academy and also of several other Spanish societies.

He was also made honorary Doctor of Medicine of the Universities of Cambridge (1894) and Würzburg (1896) and Doctor of Philosophy of the Clark University (Worcester, U.S.A., 1899).

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Cajal was a corresponding member of several societies: the Physical-Medical Society of Würzburg (1895); the Medical Society of Berlin (1895); the Society of Medical Sciences of Lisbon (1896); the Vienna Society for Psychiatry and Neurology (1896); the Society of Biology of Paris (1887); the National Medical Academy of Lima (1897); Conimbricensis Instituti Societas (Coimbra, 1898); and Member of Honour of the Italian Psychiatric Society (1896) as well as of the Medical Society of Ghent (Belgium, 1900). In 1906 he was elected an Associate Member of the Academy of Medicine, Paris; in 1916 he became a member of the Swedish Academy of Sciences. Cajal has been awarded several prizes, for example the Rubio Prize of 1,000 pesetas for his previously mentioned *Elementos de Histología, etc.*, the Fauvelle Prize of 1,500 francs of the Society of Biology of Paris (1896); the Moscow Prize of 5,000 francs, established by the Congress of Moscow (1897) to reward medical works which, published during the latter three years, have rendered the greatest services to science and humanity was awarded to Ramon y Cajal by the International Congress of Medicine in Paris (1900). In 1905, the Royal Academy of Sciences of Berlin awarded him the Helmholtz Medal. He shared the Nobel Prize for 1906 with [Camillo Golgi](#) for their work on the structure of the nervous system.

Cajal was summoned to London to give there, in March 1904, the Croonian Lecture of the Royal Society and to the Clark University (Worcester, Mass., U.S.A.) in 1899 to give there three lectures on the structure of the human brain and on the latest researches on this subject. In 1952 a volume of 651 pages was published «In honour of S. Ramón y Cajal on the centenary of his birth 1852 by members of a research group in neurophysiology» at the Caroline Institute (*Acta Physiol. Scand.*, Vol. 29, Suppl. 106).

In 1879 Cajal married Doña Silvería Fañanás García. They had four daughters and three sons.

From *Nobel Lectures, Physiology or Medicine 1901-1921*, Elsevier Publishing Company, Amsterdam, 1967

This autobiography/biography was written at the time of the award and first published in the book series *Les Prix Nobel*. It was later edited and republished in *Nobel Lectures*. To cite this document, always state the source as shown above.

For more updated biographical information, see: Ramón y Cajal, Santiago, *Recollections of My Life*. MIT Press, Cambridge, Massachusetts, 1989.

*Santiago Ramón y Cajal died in Madrid on October 18, 1934.*

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