



Sir James Chadwick: Nobel Prize in Physics 1935



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Sir James Chadwick was born in Cheshire, England, on 20th October, 1891. He attended Manchester High School before entering [Manchester University](#) in 1908. He graduated from the Honours School of Physics in 1911, and then spent two years in the Physical Laboratory in Manchester, where he worked on various radioactivity problems for Professor (later Lord) Rutherford. In 1913 he graduated with a M.Sc. degree and received a scholarship to work for Professor Geiger in the Physikalisch Technische Reichsanstalt at Charlottenburg, Berlin.

In 1919, he returned to England and resumed working for Rutherford, who had moved to the [Cavendish Laboratory](#), Cambridge. Rutherford had succeeded in disintegrating atoms (spontaneous emission by a nucleus of photons or particles) and Chadwick joined Rutherford in his studies of the properties and structure of atomic nuclei. In 1932, Chadwick made a fundamental discovery in the domain of nuclear science: he proved the existence of neutrons - elementary particles devoid of any electrical charge. He was awarded the Nobel Prize in Physics 1935, "for the discovery of the neutron". This discovery provided a new tool for inducing atomic disintegration, since neutrons, being electrically uncharged, could penetrate into the atomic nucleus without deflections whereas protons cannot do so.

Chadwick remained at Cambridge until 1935 when he was elected to the Lyon Jones Chair of Physics at the [University of Liverpool](#). From 1943 to 1946 he worked in the United States as Head of the British Mission for the development of the atomic bomb. He was knighted in 1945. He returned to England and, in 1948, became the Master of [Gonville and Caius College](#), Cambridge. He retired in 1959. From 1957 to 1962 he was a part-time member of the United Kingdom Atomic Energy Authority.

In 1925, he married Aileen Stewart-Brown of Liverpool. They had twin daughters, and the family lived at Denbigh, North Wales. His favourite hobbies were gardening and fishing. He died in 1974.