



William Henry Bragg

1862 - 1942

Awarded the Nobel Prize for Physics in 1915

William Henry Bragg was a pioneer British scientist in solid-state physics. He was born on July 2, 1862, in Wigton, Cumberland, England. Bragg's father came from a family of farmers and merchant seamen. His mother, a sweet and kind woman, was the daughter of the local vicar. He did not remember her very well, as she died when he was about seven. The small boy was taken to the family of his uncle, the owner of a pharmacy and grocery shop. In 1875 his father took him back and sent him to school at King William's College, Isle of Man. Bragg was good in his lessons and sports and became the head boy. He was fond of all games and played them rather well.

In 1881 Bragg tried for Cambridge University, **but the first interview was not a success**, and he had to return to school. After the next attempt he was granted a scholarship to Trinity College. Here he worked very hard at mathematics and two years later obtained third place in the final examination. Bragg played tennis and hockey well. His teacher was the famous physicist J.J. Thomson with whom he also played tennis. Thomson advised him to send an application for the post of professor of mathematics and physics at Adelaide University in Australia. After an interview Bragg was appointed and went to Australia where he began his career. In Adelaide the young professor became one of the best lecturers and a brilliant experimentalist. He himself designed the instruments and, indeed, all the equipment he needed for the practical laboratory.



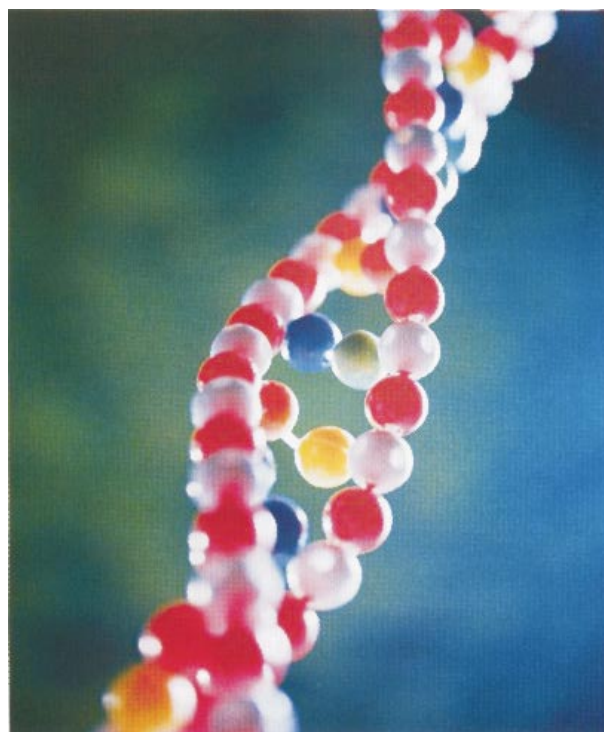
*Both he and his son
lectured at the Royal
Institution*

In 1889, in Adelaide, Bragg married 19 year-old Gwendoline, the daughter of the postmaster and government astronomer, Charles Todd. Gwendoline was lively, sociable, not very well educated but the best pupil at the Design School. They had three children. The eldest son William Lawrence Bragg went on to become the famous physicist-crystallographer. In 1904 Bragg started his experiments on the absorption of alpha particles from radioactive sources.

In 1907 Bragg was elected to a Fellowship of the Royal Society and within a year was offered a professorship in Leeds, England, where he developed the view that both gamma rays and X-rays have particle-like properties. Later, in 1912, the German physicist Max Von Laue announced that a crystal could diffract X-rays, thus implying that X-rays must be waves like light, but of shorter lengths. **Bragg, and his son, who studied physics at Cambridge, began to apply X-rays to study crystal structures.** On the basis of the 'law' that they derived they constructed a spectrometer for the analysis of crystals. For this work they both were awarded the 1915 Nobel Prize for Physics.

After World War I, Bragg founded a school of crystallographic research at the Royal Institution of London, the famous laboratory where Michael Faraday had worked in the previous century. Many young and energetic physicists gathered around him. They began to analyse organic crystals. X-rays became an important tool for research in molecular biology.

Bragg was a perfect popular science lecturer and writer. He gave the '**Christmas Lectures**' for children, which became bestsellers after their publication. He was warm, generous, free from pretension and proud of his son. He was knighted and received many honours.



*His technique was
used in identifying
the 'double helix' of
human DNA*