



Charles Augustin Coulomb

1736 - 1806

Charles Augustin Coulomb was the physicist and engineer who established the laws governing electric charge and magnetism. Coulomb's law states that *the force between two electric charges is proportional to the product of the charges and inversely proportional to the square of the distance between them*. He also held important positions of service to the French government both before the Revolution and in the first years of the Empire.

Coulomb was born on June 14th, 1736, in Angoulême, France. His mother, Catherine Bajet, was related to the wealthy de Sénac family. His father, Henry Coulomb, had begun a career in the military, but then left for a government post. It is said that Henry Coulomb was involved in financial speculation and finally lost all his money. During Coulomb's youth the family moved from Angoulême to Paris, where he attended lectures at the College Mazarin and the College de France. Catherine wanted him to become a medical doctor, but Charles announced that he was going to study mathematics.

Continuing to deny his mother's desire that he should study medicine, he was disowned (fortunately only temporarily). Penniless, Charles was forced to go to his father in Montpellier, where he joined the scientific circle - the second royal scientific society in France. It was here that Coulomb read his first papers on astronomy and mathematics. Unfortunately he had no financial support and he had to find a post which would provide him a living and at the same time allow him to continue his scientific studies; eventually he choose a career as a military engineer. In 1760 - 1761 he enrolled in the military school at Mézières.



He carried out research on windmills

Coulomb spent nine years in Martinique (in the West Indies) as a military engineer but returned to France because of ill health. He entered the French Academy of Sciences in 1781. He participated in the administration of waters and fountains, the reform of hospitals and the system of weights and measures. In 1787 he published the paper where he proved his famous law.

Upon the outbreak of the French Revolution he retired to a small estate at Blois where he devoted himself to scientific research; this included research on the friction of machinery, torsion, on windmills and on the elasticity of metal and silk fibres. **The 'coulomb', the unit of electric charge, was named in his honour.**

Charles Augustin had taken as his wife a Doué girl in her twenties. She was a wonderful wife and mother. As his biographer writes 'one wonders if the young wife did more than tolerate the old physicist who was thirty years her senior'. Their first son was born in Paris in 1790 and the second in 1797.

Living in Blois with his family he made several experiments in botanical physiology. Coulomb loved the country and spent much time tutoring his small son Charles.

He left the property near Blois only once during the Reign of Terror in May 1794, when he risked his life to enter Paris for the funeral of Lavoisier, who had been guillotined. In June, 1806, Coulomb contracted a fever which confined him to bed and finally caused his death.

Coulomb can be considered one of the great engineers and physicists not only of France but indeed of Europe as a whole in the eighteenth century.

S.E.

