

Robert Hooke 1635 - 1703

Hooke's

Microscope

Robert Hooke was a famous English scientist. He was born on 18 July, 1635. His father was the incumbent of the parish of Freshwater in the Isle of Wight. The family had no wealth. The small Robert had such poor health that he was not sent to school but taught at home, perhaps by his father. He spent most of his time making mechanical toys, clocks, model ships, watermills and so on.

Robert was thirteen when he entered Westminster School. By that time he could read Latin and Greek quite well. From Westminster he went up to Oxford, where he became a sort of research assistant to Robert Boyle. Hooke was employed by Boyle to construct an air pump for experiments in making a vacuum and compressing air. Five years later Hooke discovered his law of elasticity, which states that 'the stretching of a solid body is proportional to the force applied to it'. The law laid the basis for studies of stress and strain. Hooke applied these studies to his designs for the balance springs of watches.

In 1662 Boyle offered him the post of Curator of Experiments in The Royal Society of London and he was elected Fellow the following year. The Royal Society at first offered him no money, but later, in 1664, he was granted a small salary.

He published his *Micrographia* in 1665, where he included his observations of vegetables and animal bodies, made with a microscope, which he devised himself. His study of microscopic fossils led him to become one of the first proponents of a theory of evolution.



Hooke's Law laid the basis for studies of strain and stress



Hooke became most widely known when he was appointed one of the City Surveyors in 1666 after the Fire of London; he took part in designing new buildings as well as repairing old ones. The period 1670 - 1680 was the time of his extremely high activity in social life and in the sciences as well. He explained the phenomenon of diffraction, and he offered a wave theory of light. Hooke objected to the 'corpuscular' theory of light which Newton inclined to. This was the initial subject of their famous disagreement. The controversy continued around other subjects and they became enemies. Hooke complained that he never received adequate credit for his many discoveries.

Hooke spent most of his incredibly busy life in Gresham College in London. He never wanted to leave the College and set up a house. Everything he needed was there: library, turret for astronomical observation, laboratories with scientific apparatus. As he liked walking he kept no coach. He was fond of music and good wine, but never seems to have been drunk. The clothes he wore were made of expensive material. Sometimes he cut out his clothes himself.

He was not married, but, as is known from his Diary, the connection with one of his maids was serious and long lasting. Even after her marriage they continued to be friends. But 'the greatest' was his niece Grace. She was brought up in his home. When Grace grew up, she became his mistress. He loved and admired her. He suffered fiercely from her premature death.

Hooke's health was not good. His illness, as well as medicine, gave him the subject for scientific observation. He died in 1703 and, like his enemy, Newton, he died intestate. During the forty years of Hooke's work for The Royal Society and for many years after his death he was regarded as one of the greatest English scientists.

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