

The great English worthies of the 17th - 18th century (to be concluded)

Continuing on the topic I came upon another great of the era, Henry Cavendish (1731-1810), the brilliant English experimental and theoretical chemist and physicist. Cavendish, born in a rich family, attended Cambridge University in 1749, but left after two years without taking a degree. He was the first to combine hydrogen and oxygen to form water and find out specific gravity of hydrogen and carbon dioxide. His famous torsion balance experiment 'the Cavendish's experiment' led to estimate the Earth's mass and density and determine the gravitational constant. He conducted several path breaking researches into varied fields of physics and chemistry that led to seminal information on the composition of atmospheric air, the properties of different gases, the law governing electrical attraction and repulsion. Cavendish even wrote a manuscript on mechanical theory of heat.

Cavendish was notoriously shy of men and more so of women. He was uncomfortable in society and avoided it as much as he could. He did not marry, conversed little, was taciturn and solitary and regarded by many as eccentric. Because of his asocial and secretive behavior, Cavendish often avoided publishing his work, and like Newton much of his findings were not even told to his fellow scientists, though for a reason different from Newton's. When a large number of unpublished works and papers were later look through by nineteenth century scientists James Clerk Maxwell (1831-1879) and Edward Thorpe (1845-1925) long after his death, they found things for which others had been given credit. These included Cavendish's discoveries and vital leads regarding Richter's law of reciprocal proportions, Ohm's law, principles of electrical conductivity including Coulomb's law, and Charles's law of gases. He even had a theory of partial pressures before John Dalton (1766–1844) and initiated the introduction of the concept of voltage.

Cavendish however, did not allow his natural shyness to impede his work. Joseph Priestley (1773-1804) used an electrostatic machine to spark ordinary air with inflammable air to notice that water was formed and he shared the information with Cavendish. Cavendish repeated Priestley's experiment, but using oxygen in place of ordinary air. He found the same results and advised Priestley of his findings. He was generally cooperative in scientific investigations by sharing the results with contemporary scientists unlike Newton.

When Cavendish published his findings on the formation of water in 1784, the French scientist Lavoisier claimed that he had discovered how water was formed—in fact, it was Lavoisier who coined the name "hydrogen," which means "water former." It was not until the mid-nineteenth century, when Cavendish's notebooks were published, that he was given sole credit for discovering that water is composed of hydrogen and oxygen.

Though enormously wealthy, he was reputed to own but one suit, and an old-fashioned hat that he mostly donned. Cavendish lived a lonely and humble life, and was committed to the cultivation of science through experiments. His death was as lonely as his life; when he sensed that the end

was near, he instructed his servant to leave the room and not come back until a certain time. When the servant returned, he found that Cavendish had died.