HUMPHRY DAVY: CHEMISTRY'S FIRST SHOWMAN

Chapter 1: Precocious Chemist (2:41)

One of those caught up in the worldwide race to discover new elements is Humphry Davy, a precocious, self-taught British chemist from the remote seaside village of Penzance. As a 17-year-old apothecary's apprentice, Davy performs an experiment designed to challenge Antoine Lavoisier's contention that heat is an element.

Chapter 2: Davy in Bristol (3:32)

Davy's findings land him a job at the Pneumatic Institution in Bristol. Charged with studying the health effects of newly discovered gases, Davy recklessly tests the gases on himself, nearly killing himself several times. In Bristol, he also becomes part of a circle of poets and publishers who would define the Romantic Age.

Chapter 3: Laughing Gas (2:30)

Davy finds that one of the gases he tests – nitrous oxide – makes people deliriously happy. "Laughing gas" becomes a favorite amusement in British society. Davy writes up his findings in his first book, but just as he's finishing it, his attention is diverted by a discovery that electrifies the world of science.

Chapter 4: The First Battery (2:14)

In 1800, an Italian named Alessandro Volta creates a new source of electricity – a simple device called the "voltaic pile." Volta's battery offers the first steady supply of electricity and makes possible a range of new experiments. Intrigued, Davy sets aside his work on gases and begins his own research into electricity.

Chapter 5: Chemistry's First Showman (3:59)

Impressed with Davy's book on nitrous oxide, the founders of the new Royal Institution in London name him director of their chemistry lab and soon promote him to chief lecturer. Young, handsome, eloquent and charismatic, Davy dazzles London audiences with his popular talks, becoming chemistry's first great showman.

Chapter 6: New Elements (6:09)

Determined to be more than an entertainer, Davy's dives into the subject he's been itching to return to ever since Bristol: electricity. He builds a huge battery in his basement laboratory, hoping to use it to pry substances apart into their elements. In this way, he discovers potassium and sodium in 1806 – and four more elements the following year. Other scientists take up his technique, sending the number of elements even higher.

Chapter 7: Electric Glue (2:34)

Exciting as these discoveries are, Davy's biggest contribution is his insight into one of chemistry's great mysteries: How are molecules formed? If electricity can pry apart substances into their elements, Davy reasons, perhaps it's the force that sticks them together in the first place. It will take more than a century to figure out how this "electric glue" worked, but after Davy it's clear that electricity is an essential property of matter.